TECHNOLOGY DEPT.

PUBLIC LIBRARY
MAY 18 1933
DETROIT

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · MACHINERY · PARTS · ACCESSORIES · TOOLS

Vol. 15. No. 1983 — Entered as second-class matter Aug. 27, 1925, Post Office, N. Y., N. Y. Under Act of March 3, 1879 — NEW YORK, WEDNESDAY, MAY 17, 1933 — 5 Cents. $12 Per Year.

First Copy

Steel and Parts Makers Benefit From Increased Car Production Schedules

Vehicle Producers Are Reported to Be Farming Out a Greater Percentage of Parts Business Than in Previous Years

Detroit, May 16.—While motor vehicle manufacturers are the prime beneficiaries of the present upward swing in sales, the effect of the revival has been perhaps even more encouraging to industries which depend largely on the autotive for volume. The steel producers here in a few weeks' time have been lifted from the depths of depression to a very satisfactory level of output and sales.

As the industry passes the mid-post in May there is no sign of slackening in output. In fact, dealer orders have increased in many plants during the past week and production is being held strictly to orders on hand.

As an instance of how the present uplift in vehicle buying has affected the steel industry here, it is only necessary to point to the Great Lakes Steel Corporation, which is operating at practically full capacity and has even been shipping in sheets and bars from other producing centers.

Parts companies have immediately felt the effect of this revival. Several of the vehicle manufacturers are farming out parts operations, particularly castings, in greater volume than usual. The Chrysler organization has been buying a considerable tonnage of light castings. Ford has increased its orders to outside parts producers. The result is that many of the smaller plants

(Continued on Page 4)

HUPMOBILE SALES IN MAY EXCEED APRIL TOTAL 23%

Detroit, May 16.—Continued favorable sales reports are being received from the Hupmobile plant. Today this company announced that shipments for the week that ended May 13 totaled 238 vehicle units, an increase of 82 per cent. over the previous week. Actual deliveries for the first two weeks of May compared with the first two weeks of April show an increase of 23 per cent.

If deliveries during the rest of May continue in the same ratio as during the first two weeks, the month's deliveries will come within sixteen cars of the best month in 1932. Reports from the field indicate a greater degree of optimism among dealers than at any time in several years.

G. M. ACQUIRES SUNLIGHT ELECTRIC

Youngstown, May 16.—General Motors Corporation, through Delco Products Corporation, a subsidiary, has acquired the Sunlight Electric Manufacturing Company of Warren, O., producer of fractional horsepower motors. The transaction is reported to involve $1,000,000. Last year General Motors bought the Packard Electric Company, also of Warren.

Sunlight Electric has monthly capacity of 30,000 units for refrigerator and other uses, operating at full. It employs 350 men. Operations will be continued under the present management. Delco products will take over the Warren plant on June 1.

CHICAGO DEALERS TO HOLD PROGRESS SHOW

Chicago, May 16.—A spectacular drive for sales will open Saturday and continue for a week, when dealers of Greater Chicago will stage what they have named an automobile "Progress Demonstration Show."

Lafayette Markle

The program has been worked out and is being handled under direction of the Chicago Automobile Trade Association, the show committee appointed by President Lafayette Markle being made up of the following: Tom F. Hay, president of Thomas J. Hay, Inc., Reo distributors; D. P. Gambill, vice-president and general manager of the Gambill Motor Company, Hupmobile distributors; R. H. Keeling, vice-president of the Studebaker Sales Company of Chicago; G. S. Daniels, assistant zone manager of Buick-Oldsmobile-Pontiac, and H. N. Bradford, city sales manager of Chevrolet.

Six parades in as many districts of the city and suburbs will touch off the show Saturday in dramatic fashion. These parades will be different from any yet held in Chicago in that each make of car will be represented in the line of march by

(Continued on Page 2)

OLDSMOBILE MAY OUTPUT WILL BEAT APRIL 39 PER CENT.

Detroit, May 16.—Oldsmobile has been compelled to make two successive increases in its production schedule this month and the new total will be 39.4 per cent. above the April output, according to a statement issued by R. M. W. Shaw, sales manager of the company.

R. K. White

Shaw adds that Oldsmobile's stock of used cars at the end of April had dropped by more than 37 per cent. below the used car inventory of a year ago. Reports from dealers in many sections indicate that Oldsmobile sales are due for an extremely lively period during the rest of May and in June.

South and Rocky Mountain Areas Top April, 1932, in New Car Sales

Six Out of Eight Southern States So Far Reporting Show Gains Over April Last Year; All Rocky Mt. States In Show Uplift

New York, May 16.—Returns are now in hand on passenger car sales in twenty-two states and the District of Columbia. While the total is slightly below that of April, 1932, in the same territory, analysis of the figures is both interesting and instructive.

Segregating the states by geographical sections shows that two of these districts are running definitely ahead of last year. The greatest gainer is the South, with the Rocky Mountain states area second. The other geographical divisions show loses under last year's totals, though individual states have been ble to register increases.

The South makes by far the best showing, with 9,832 passenger cars sold, against 8,937 in April, 1932. Of the Southern states so far reporting only Virginia shows a loss. The District of Columbia, usually lumped with the South, also reports a loss.

In the Rocky Mountain territory Idaho, Montana and Utah all show gains, with the rest of this group still to be heard from.

Most of the loss shown in these figures is to be found in the Great Lakes group of states. Of these only Illinois shows a gain, while Michigan, Minnesota and Wisconsin give heavy losses.

With twenty-six states still to re-

(Continued on Page 4)

NEW JERSEY A. T. A. TO HEAR VESPER AND REEVES ON SATURDAY

Newark, N. J., May 16.—More than a thousand automotive dealers, with their sales and service managers, are expected in attendance at the fourteenth annual convention of the New Jersey Automotive Trade Association, which is to be held at the Newark Athletic Club here Saturday.

The convention will start promptly at 1 o'clock, and will be followed by

Alfred Reeves

F. W. A. Vesper

a banquet in the evening. Speakers of state and national reputation in the industry will address the trade at both the afternoon and evening sessions. Among others listed are Motor Vehicle Commissioner Harold J. Hoffman of New Jersey, Fred W. A. Vesper of St. Louis, president of the National Automobile Dealers Association; James Dalton, editor of Motor; Leon F. Banigan, editor of Automobile Trade Journal; Leonard Dreyfuss, president of the United

(Continued on Page 3)

STEEL PRICE RISE OF $2 A TON SEEN

New York, May 16.—Higher prices for finished steel were nearer to realization yesterday as plans for an advance of at least $2 a ton on certain semi-finished products were made known, according to the New York Daily Investment News. The upward revision on semi-finished steel is expected to apply particularly to billets, slabs and sheet bars, and the new prices will probably be effective on orders for third-quarter delivery.

The higher quotations, it is believed, will be put into effect first by one or two individual companies, with the rest of the industry following immediately. Federal laws prohibit concerted action by the industry as a unit. The price advance may be brought about by the expedient of withdrawing the current price list of $26 a ton on leading semi-finished goods.

Some important consumers are understood to have placed orders for their third-quarter requirements at the old price, but it is believed that no such orders have been accepted within the past few weeks. During that period the prices of scrap steel, pig iron and other raw materials have advanced sharply along with commodity prices generally.

Unless the steel companies are to lose the principal benefits obtained from operating economies, prices of semi-finished and finished products must be raised if the rise in commodity prices continues or holds at current levels.

Talk of higher prices has been

(Continued on Page 4)

A. H. SWAYNE NAMED BY ADVISORY COUNCIL OF ARBITRATION GROUP

New York, May 16.—Announcement of the appointment of Alfred H. Swayne, president of General Motors Corporation, to serve on the business advisory council of the American Arbitration Association, was recently made by Lucius R. Eastman, president of the association.

Alfred H. Swayne

The purpose of the council, which will be composed of one outstanding representative from approximately thirty industries, will be to assume the direction of efforts to be made to co-ordinate and develop the use of arbitration in those industries in the gradual resumption of business activities, as an and in the revival of trade, the restoration of confidence and the return of normal conditions.

The plan contemplates a survey of each industry, under the direction of its respective chairman, to discover to what extent arbitration is now being used, whether the adoption of standardized arbitration clauses is practicable, and whether rules of procedure for the use of the industry can be developed, with a view to correcting existing abuses and injurious practices. The co-

(Continued on Page 4)

N. S. P. A. PLACING SPECIAL EMPHASIS ON ITS FIELD WORK

Detroit, May 16.—Special emphasis at this time is being placed on field work among members of the National Standard Parts Association through the activities of A. R. Sandt, director of marketing research, and V. W. Schlieder, field secretary, N. S. P. A. headquarters, Detroit, reports.

Sandt is now on a two months' trip through the South and Southeast, to be concluded about July 1. This trip follows on the heels of one which took him through Illinois, Wisconsin and Minnesota.

Schlieder's full time is devoted to work with wholesaler members, his past for months having been spent in the Western states.

The contact program of both Sandt and Schlieder includes a study of members' problems in the light of the experience of others, as gathered through personal contacts, and through the N. S. P. A. surveys on such subjects as sales management, machine shop costs, internal management, etc. In addition,

(Continued on Page 3)

PENNSYLVANIA WINS STORE-DOOR ISSUE IN SUPREME COURT

Washington, May 16.—A review of a lower court decision upholding the right of the Pennsylvania Railroad to extend its store-door collection and delivery service in New York without seeking the approval of the Interstate Commerce Commission was refused yesterday by the Supreme Court.

A redetermination of the decree of the lower court was sought by the New York Dock Railway, Bush Terminal Railroad Company, Brooklyn Eastern District Terminal, and Margaret A. and Martha A. Jamison, co-partners doing business

(Continued on Page 8)

GOODYEAR REHIRES 1,700 MEN SINCE APRIL 1

Akron, May 16.—Goodyear Tire & Rubber Company has re-employed 1,700 men since April 1 and the chances are that this number will be raised. Employment so far has been confined to Goodyear employees laid off in 1932 who still remain in Akron.

The company is striving for balanced operations of four six-hour shifts a day five days a week, although congestion in some departments has necessitated seven-day operations.

Operations at the Gadsden tire plant have been increased to six days a week from three, while three of the southern cotton fabric mills have gone from eighteen hours to thirty hours a week.

COOK COUNTY NEW CAR SALES IN APRIL SLIGHTLY BELOW '32

Chicago, May 12.—While Cook county new car registrations for April showed a loss, as compared with the same month last year, listings for the entire state were ahead of those of a year ago.

Cook county registrations were 4,533, compared with 4,771 in April, 1932, while for all of Illinois the total was 8,132, which compares with 7,982 in the preceding year.

The increase down state is accepted as an indication of a better feeling among the farming element who are in the market for replacements.

New car registrations for Cook county for the four months are 408 less than for the same period last year.

Chevrolet continued to lead the field in the April totals, having 1,116, as against 896 for Ford, which took second place. Of the Ford sales, 834 were of the eight. Plymouth continued to occupy third place, having 506, which was 78 cars less than for April a year ago.

Pontiac was fourth, showing a marked gain over the preceding year, with 402, against 283. Buick, in fifth place, listed 262, and Oldsmobile, in sixth, had 233. The latter had a substantial gain over April, 1932, when it totaled 183.

Following are the new car registrations for April this year compared with the same month last year:

	April, 1933	April, 1932
Chevrolet	1,116	1,312
Ford	896	349
Plymouth	506	584
Pontiac	402	283
Buick	262	289
Oldsmobile	233	183
Dodge	172	123
De Soto	121	175
Chrysler	116	246
Hudson-Essex	95	152
Willys products	92	121
Packard	84	89
Cadillac-La Salle	68	89
Studebaker	62	181
Nash	57	190
Auburn	56	81
Graham	51	59
Rockne	44	57
Hupmobile	37	110
Lincoln	22	20
Pierce-Arrow	12	30
Reo	10	20
Franklin	7	9
Continental	7	0
Miscellaneous	4	22

Listings for the four months show Chevrolet occupying a fairly liberal lead over Ford for first place. The General Motors unit totaled 3,122 and Ford listed 2,402.

Following are the new car registrations for the four months with comparisons for the same period of 1932:

	1933	1932
Chevrolet	3,122	3,658
Ford	2,402	558
Plymouth	1,732	951
Pontiac	1,015	822
Buick	791	962
Oldsmobile	613	687
Dodge	504	442
De Soto	410	445
Chrysler	327	597
Studebaker	267	663
Packard	229	311
Willys	225	407
Essex	194	318
Nash	190	590
Graham	153	295
Rockne	146	94
Cadillac	114	253
Auburn	113	249
Hupmobile	103	250
Lincoln	69	78
La Salle	54	118
Hudson	46	153
Reo	37	60
Pierce-Arrow	34	75
Willys-Knight	34	75
Franklin	31	44
Continental	26	0
Marmon	2	40
Cord	1	15
Durant	1	4
Miscellaneous	11	156

PITTSBURGH GLASS NOT TO BUY FORD PLANT

Pittsburgh, May 16.—A widespread report that the Pittsburgh Plate Glass Company is acquiring the glass plant of the Ford Motor Company was denied here by officials of the Pittsburgh Plate Glass Company.

G. M. OF CANADA ANNOUNCES PROMOTIONS

Toronto, Can., May 16 (UTPS).—Two appointments by General Motors of Canada are promotion of R. J. MacFarlane, of purchasing department, to post of general purchasing agent, and of Wallace H. Clark to position of being in charge of the assembly and sheet metal plants at Oshawa. Mr. MacFarlane came to General Motors three years ago from the Ford company, and Mr. Clark is promoted from the staff of H. A. Brown, vice-president and general manager of General Motors of Canada.

CHICAGO DEALERS TO HOLD PROGRESS SHOW

(Continued from Page 1)

a current model, and, in contrast, the oldest model procurable. Price tags and other signs, conspicuously displayed, will bring out how sharply motor car prices have declined during the past few years and how incomparably more desirable the 1933 creations are than their predecessors of early days.

The show will have another keynote beyond bringing out the vast improvements made and the high state of perfection reached in the new cars. Deaers and salesmen in their contacts with prospects will stress the wisdom of buying now, citing evidences of returning prosperity and the certainty of higher prices for automobiles.

Efforts will be made to book a record number of demonstrations, for it is felt that only by riding in and driving the new cars can motorists properly appreciate the progress made by automotive engineers as embodied in these automobiles. Performance appeal, they say, will more than bear out the eye appeal of the stylish new models, and that is the message they will drive home to the buying public.

Special displays, window posters and other decorative effects will play an important part in the scheme of things at this festive show.

Trade leaders here are confident that the event will be extremely productive of sales and will be successful in dramatizing the spring selling season at its height.

The week chosen for the show is significant also in that the one week affair will be a curtain raiser to Chicago's A Century of Progress International Exposition, closing on the date the world's fair here opens. It is expected to do much in bringing the automobile into the limelight.

Assisting the general show committee will be six district chairmen and forty group chairmen, so that each part of the city will be thoroughly covered for the efficient handling of the show.

PRAIRIE PROVINCES ARE BUYING MORE AUTOMOBILES

Montreal, May 16.—Great improvement is apparent in the demand for automobiles in the prairie provinces, according to C. E. McTavish, general sales manager of General Motors Products of Canada, who has just made a western tour. "There has been an almost dramatic demand for cars," says Mr. McTavish, "in sections of the prairie provinces that the general public in other parts of Canada have come to believe were economically prostrated by low prices for agricultural products, particularly wheat. Chevrolet sales in Regina are up over 40 per cent. over last year's for the first three months of the year, and other General Motors cars show similar increases. In Moose Jaw, Chevrolet sales are within a few cars of the total for the whole of 1932. Calgary has sales greater than last year by 20 per cent."

CARS DRIVEN ABOARD SHIP FOR OCEAN TRIP

Montreal, May 16.—Water borne freight service for export automobiles direct from Oshawa to Britain, with one transshipment at Montreal, was inaugurated when ten McLaughlin-Buicks were driven aboard the City of Montreal, Canada Steamship Lines, lashed to the deck and started on their trans-Atlantic journey. At Montreal the cars were transferred to the C. P. steamer Beaverford, and made the ocean trip without being dismantled or boxed.

FINANCIAL NEWS

COLUMBIAN CARBON

New York, May 16.—Columbian Carbon, in its preliminary report for the quarter of March 31, shows net income of $242,333 aftee depreciation, depletion and Federal taxes, equivalent to 45 cents a share on 538,420 shares of no par stock. This compares with $277,954, or 51 cents a share, in the first quarter of 1932.

CATERPLLAR TRACTOR

Peoria, Ill., May 16.—Caterpillar Tractor Company reports for April net sales of $854,271, resulting in a net loss for the month of $87,891.

GENERAL MOTORS

Warren, O., May 16.—Purchase of the Sunlight Electric Company of Warren by the General Motors Corporation in a deal involving approximately $1,000,000 was announced today by John B. Estabrook, president and treasurer of Sunlight.

The sale will be as of June 1.

The plant, which manufactures fractional horsepower motors for refrigerators, washing machines and other household appliances, will be operated as a subsidiary of the Delco Products Company of Dayton, a subsidiary of General Motors.

STEEL PRICES

New York, May 16.—An advance of $2 a ton or more in the price of important semi-finished steel products, including billets, slabs and sheet bars, is contemplated by the steel industry, the new prices to apply to third quarter deliveries, according to reports in steel circles yesterday.

Commenting on the possibility of higher prices in these products, Dow, Jones & Co. said that "unless there is a sudden reversal in conditions in the industry the higher prices should be announced within a month. Leading interests have been considering getting higher prices for certain products in view of the fact that replacements of raw materials in inventorics are now costing more than in some time."

Current quotations on billets, slabs and sheet bars, Pittsburgh basis, are around $26 a ton.

STEWART-WARNER

Chicago, May 16.—An opposition committee of stockholders of Stewart-Warner Corporation headed by Oscar U. Zerk has sent a letter to stockholders soliciting their proxies for the adjourned annual meeting of stockholders now scheduled for May 19, which, the letter states, will be postponed until June 1.

Stewart-Warner Corporation has sent a letter to stockholders, signed by C. B. Smith, president, declaring that those who have already sent in proxies for the annual meeting need send no further proxies for the adjourned meeting, and soliciting uproxies not presented for the regular annual meeting.

The letter describes the management's interpretation of the position of Mr. Zerk. In repard to the cost position of the corporation, the letter says: "Within the past few years, like many other manufacturing corporations, Stewart-Warner has sustained heavy losses and long prior to January, 1933, the directors had introduced many economies in operation, including reductions in salaries and wages.

"In January, 1933, they became convinced that still further drastic economies were necessary. Accordingly experts were employed to make a full survey of the plants and operations of the corporations to the end that the corporation might have the most competent advice looking towards further reductions in costs and increased efficiency. Since the coming in of the report the board has made many changes in the internal organization of the corporation.

"As part of the general program it is planned at the annual meeting to increase the board of directors to nine, to the end that the board may have the benefit of the busines sadvice of stockholders in other lines of endeavor."

CRUDE OIL

Topeka, Kan., May 16.—Gov. Alf M. Landon urged Texas and Oklahoma today to join with Kansas in preventing large oil companies from storing their crude petroleum at what he termed "ruinous prices."

SPARKS from DETROIT

Chevrolet at the Fair

* * *

Engel at Detroit

* * *

S. A. E. Medals

* * *

Downhill Record

* * *

Chris Sinsabaugh
Detroit Editor

CHEVROLETS are going to be sold at retail in Chicago's world's fair grounds. Yes, John H. Public is going to stand alongside the Chev assembly line in the General Motors edifice, pick out a particular paint job that hits his fancy and say "I'll take that one." And at the end of the line that job will be wrapped up and he can take it away with him, provided he has made the necessary financing arrangements with the salesman standing right there with the order book while his choice has been moving along the line.

There'll be twenty-five cars a day coming off that line, and the retailing of them will be one of the most unusual stunts that the Klingler forces ever have undertaken—something new and appealing to the fair visitor who is seeking a souvenir of his trip, even if he has to pay a smart sum for it.

* * *

A DRESS REHEARSAL is being held this week. The car assembly line and the parallel Fisher body line have been installed, and the first trial yesterday showed that the jig-saw puzzle has been put together—everything clicks, with the tempo of the usual Chev plant slowed from a car every few seconds to one every twenty minutes, so the spectators can see how cars are built.

Sales Manager Klingler is using the Century of Progress exposition as a bait to spur salesmen all over the country to renewed activity this spring. More than 1,000 free trips to Chicago will be awarded to the field forces this summer on the basis of meritorious sales work during May and June.

* * *

NEWS HOT OFF THE GRIDDLE and right from the feed box is that Albert F. Engel has been named as the Detroit representative of Stewart-Warner and all its subsidiaries, the Alemite Corporation, Bassick Manufacturing Company, making hood latches, and the Stewart Die Casting Company. Engel is no stranger to this work, for he has been the Detroit manager of Alemite since the death of Fred J. Lane a year ago. He has been with Alemite here since 1925.

Few of the present generation of automobile folk in this area go farther back in the industry than does this Engel. He started in as office boy in the Cadillac factory in 1908, when Henry Leland was building one-lungers, and stepped up in his ten years of service there until he became assistant purchasing agent. He followed the Lelands to the Lincoln plant in 1918 as assistant production manager building Liberty motors. He switched from there to Wright-Martin in the same kind of a job; then came back to Detroit and started selling automotive products on his own hook until he lined up with Alemite in 1925.

* * *

THE RIPPINGILLE administration winds up its year next Monday night when the Detroit section of the Society of Automotive Engineers stages a meeting at the Book-Cadillac to install new officers, listen to an inspirational address on "A Ten-Point Educational Program for Business," by Alexander Ruthven, president of the University of Michigan, and watch John A. C. Warner, general manager of the S. A. E., personally pin a medal on the Detroit member who has made the best showing in the membership drive.

* * *

A NEWSPAPER LEGEND is that a dog biting a man is nothing unusual, but when a man bites a dog it's front page news. This old wisecrack came back to me when I got word from the Graham factory that Cannonball Baker, driving a stock Graham eight, climbed to the top of Mount Mitchell, near Asheville, N. C., twenty-two miles, in 42 minutes 33 seconds, cutting nearly three minutes off the old record. That's like the dog biting the man. But it seems that Baker turned round and drove the twenty-two miles DOWN HILL in 42 minutes 15 seconds. That's where the man bit the dog—that's news.

* * *

AGAIN DOES TOM CORPE, advertising manager of General Motors of Canada, tap the old typewriter for something worth while. His last batch of Canadian gossip rhapsodizes on the new car. As Corpe sees it:

"Reactions to the shiny new family sedan are different. Father wants to know how many miles to the gallon. Mother asks the color of the upholstery. Son inquires how fast she will go, and daughter would like to learn if it has a nice sounding horn. And the man next door? He calls up a dealer and wants to know how soon he can have an appraisal on his old car."

Retail Salesmen — This Is Your Page

This department is devoted to the interests of the retail sales division of the industry. Salesmen, this is your department. Automotive Daily News wants you to get something from this department that will help you in your work on the firing line. It wants you to pass on your own experiences, success, failures to help your brother salesmen. Send in your story in the form of a letter, or even a postal card, and let us get it ready for publication. Your achievement or your mistake may help another salesman to make sales or avoid errors that cost you commissions.

Dealers read this page. Give us the benefit of your reactions on these problems that affect the work of your salesmen, the men on the firing line, the men who bring home the bacon or don't.

SELLING DEALERS ON THEIR OWN ABILITY TO SELL

This is the second installment of an article showing the excellent method of conducting meetings for branch dealers and salesmen as developed by the Teepy-Seltz Company, distributors of Studebaker and Rockne at Kingstown, Pa.

SERVICE CREATIONS

Automobile dealers have created this business, and are you getting your share? Can you begin to imagine the many thousands of gas stations that are cutting into our lubrication business? The many super-service stations that are soliciting and bidding for a portion of the business which we have established, and which they are getting? Look at the number of body, radiator and fender shops that are soliciting for the wreck jobs, and successful to a measure in obtaining the big portion of wreck business. How many dealers have taken advantage of the accessory and tire business? When next driving across country note as you drive through each town the many shops that have taken advantage of this opportunity. You will note from general appearances that they are getting their portion of the available business. The garages that primarily was for the purpose of housing automobiles has also awakened to the fact that the dealer has been asleep at the switch and has gone in for a slice of the dealer repair and accessory business. We have also been responsible in creating another very profitable end of the business, known as the auto electric service, and we have permitted our customer to become educated to patronize auto electric service as an exclusive service. When a motorist has electrical or battery trouble, the first thing that comes into his mind is to call or drive his car to a battery shop for assistance.

The replacement parts business has also become a very large factor, the dealer is solely responsible for this condition. After a person made the purchase of an automobile, nine times out of ten he was unable to get parts service from the dealer from whom he purchased his car. This encouraged his shopping around to locate a service organization that might render more prompt and efficient service. On the strength of these failings we also encouraged the manufacturing of "gyp" parts for replacement; a business that has cut quite heavily into our parts business. You are overlooking a big bet when you do not carry a parts stock inventory.

Towing service can also be made very profitable; the best proof is the number of towing stations you see as you drive through the country. We have also established a business known as the auto paint shop, another creation that the new car dealer is responsible for. And now comes our greatest, failure; we have permitted an uncountless number of alley repair shops to spring up and take away our service business. Can we blame any one other than ourselves for this condition? In many instances the customers patronizing these small shops are drawn by the aggressiveness on the part of the individual mechanic who makes it a point to keep in personal contact with the car owner, a thing that the average dealer does not do. The loss of this portion of the service business can be traced to laxity on the part of our service supervision. There are also a great number of auto top and upholstery shops that are making a splendid livelihood. This has also been created by you dealers, and I wager to say that very few of you dealers selling new cars are deriving a profit out of the auto top and upholstery end of the business. Why should a motorist be misled in buying a spring from a "gyp" replacement store when a genuine factory replacement spring with the proper tension and the proper design can be purchased at no greater cost from you or I as authorized new car dealers.

The dealers have assumed all of the liabilities to create this tremendous service market, but what steps have they taken to hold it? (Very few, if any.)

FOLLOW-UP CARD

Let us lay before you a plan which we have tried here. We have included in our personnel a service salesman. His duties are soliciting service business by telephone. He starts telephoning at 9 o'clock in the morning and keeps at it religiously until at least 7.30 in the evening. The results were quite outstanding, and in a very short while we had our service department humming with activity. This made possible the keeping of our shop busy along with some profit possibilities. In connection with our telephone service we have employed a service salesman we have employed a service salesman calling on our car owners. His duties are not alone to call on our own make car owners but to call on competitive make car owners as well. We have found through this experiment that we have been able to derive at least 12 per cent. foreign make car service. One may easily appreciate that this would add materially to our sales department, as the service department is certainly the entrance to your new car sales market.

In connection with the telephone solicitation and the follow-up with a personal contact, we have sent out a postal card expressing our thanks for the courtesy extended to our representative and that we anticipate to have the pleasure of rendering our service, as is self-explanatory on this chart. We make it a point to send out four service specials each month to our mailing list, and in each case it encourages the purchase of these repairs for reasons of the outstanding value being offered. We have found through actual experience by taking a group of operations of one similar character we can turn them out faster and better at less cost.

This places us in a position to compete with the smallest shops, and as a result we are securing a nice service business.

We have tried to show you, "What's Wrong With Business," but have we given you a comprehensive diagnosis as to what to do to rehabilitate your financial structure? The following are my recommendations, and from this only can you hope to rehabilitate your financial structure.

First, put forth your very best efforts at all times. Nothing really worth while is accomplished without sincere efforts. Cultivate your mind along the lines of being able to see things as they actually are. To see a true picture of conditions is the beginning of creations along the line you would have them. An analytic mind is at the base of every good deal. Be courteous at all times, for

(Continued on Page 8)

NEW JERSEY A. T. A. TO HEAR VESPER AND REEVES ON SATURDAY

(Continued from Page 1)

Advertising Corporation, and Alfred Reeves, general manager of the National Automobile Chamber of Commerce.

Methods of promoting business revival will be studied, and legislation affecting the interests of the motoring public will be discussed. The association may take a stand against the imposition of new taxes on automobiles and accessories.

In all likelihood some of the speakers will call attention to the encouraging reports of gains in motor sales, both at home and abroad, during the first quarter of this year, as compared with a similar period in 1932.

Charles E. Henkelman of Atlantic City is president of the state association; Thomas J. Brogan of Paterson, vice-president, and Harry E. Ewan of Atlantic City, secretary and treasurer.

THE PROGRAM

1 p. m. sharp—Business meeting and annual election of officers of the New Jersey Automotive Trade Association.

2 p. m.—Hon. Harold G. Hoffman, motor vehicle commissioner of New Jersey, will speak. Round table discussion of trade problems, including "Safety as a Sales Asset," "Which Dealers Should be Licensed to Issue Bills of Sale" and "How Gasoline Tax Diversions Hurt Business" will be among the topics.

Leon F. Banigan, Philadelphia, editor of Automobile Trade Journal, address on "Modern Maintenance and Profits."

Alfred Reeves, general manager of the National Automobile Chamber of Commerce, who has just completed a trip around the factories, will tell "What (Is Being Done to Help Dealers."

5 p. m.—Adjournment.

7 p. m. sharp—Annual banquet under the auspices of the Newark Automobile Trade Association.

Leonard Dreyfuss, New York, president of the United Advertising Corporation, will speak on "Where Is Business Headed?"

James Dalton, editor of Motor, will speak on "The Present and the Future."

N. S. P. A. PLACING SPECIAL EMPHASIS ON ITS FIELD WORK

(Continued from Page 1)

both men carry film projection equipment and are delivering the "Getting You Share" talk to repairmen and the "Turn on the Heat" talk to local groups of member and non-member wholesalers.

This last activity among jobber groups, N. S. P. A. headquarters reports, is receiving considerable attention because of the great good that wholesalers are accomplishing through co-operative efforts, initiated by the N. S. P. A., in a growing number of communities.

Commenting on this subject, Sandt says, "One of the weaknesses of local jobber groups has been the fact that there has been no one with sufficient time and interest to develop and direct activities which would maintain the interest of the participants for more than a few months at a time. Realizing this and the other problems to be met by such groups, N. S. P. A. has prepared a plan of procedure for the organization of local groups of automotive wholesalers supplemented by a manual going into considerable detail as to suggested local group activities including credit and collection services, business ethics and arbitration procedure, surplus merchandise information service, legislative and social programs.

"These manuals, together with others which will be prepared for local groups from time to time, are available through N. S. P. A. wholesaler members."

N. A. D. A. ADVISES MEMBERS TO SELL MOTOR TRANSPORTATION

The National Automobile Dealers Association is sending out editorial material designed to help local dealers sell cars. The association expresses the view that there "still exists in these United States a sufficient buying power to make the automobile business a whole lot better. The first job is energize a timid, disinterested buying power. We don't believe it can be done by putting pressure on the local dealer.

"But it can be done, we believe, by reselling the advantages of automotive transportation to the world—by going back to the first sales arguments employed years ago when the car was a new thing. These arguments are more potent now than ever before because experience of mankind has established the truth about them. Today we must sell automotive transportation as well as this, that or the other make of car, if we are to bring the man who is able to buy into the market."

Here is how the president of the National Automobile Dealers 'Association feels about it:

By F. W. A. VESPER

The relationship of the automobile to human life has afforded psychologists and social analysts an almost limitless field in which to study and record the application of a mechanical device to human affairs.

Out of a quarter-century of automobile ownership and use it has become unmistakably established that when one buys an automobile he very definitely adds to the measure of his life? not merely in length of his life, not merely in length desire to live is the primary urge of all mankind, the desire to live more completely naturally follows as a great motivating principle. Inasmuch as life itself consists of activities, contacts and associations the means by which one can increase them is in a way as valuable as the privilege of living itself.

Time and distance have always been the great barriers to life. Life which is confined to a small area or to one place soon becomes mere existence. There is not much difference between one day and another when one must spend his time in one place only.

The ability to get around and go places easily and quickly provides for life the same advantage that several rather than one shop provides for the shopper. Until the automobile came, few people get a glimpse into more than a few of the shop windows of life. They were compelled to shop for romance, occupation, pleasure, education, sentiment in the same place a whole life long. The variety for selection was very limited.

But when one owns a car, miles mean nothing and even time is a minor consideration. By merely buying an automobile one is enabled to live more in a week than he is otherwise enabled to live in a year or a period of years.

Deep students of such things find these the reasons for the universal desire to own and drive an automobile. And they find that these reasons justify any sacrifices necessary to provide a new car for family or individual.

CRANE-WILLIAMS MAKES 37TH ROUND WORLD TRIP

Vancouver, B. C., May 16.—On his thirty-seventh trip around the world in the interests of his company, George H. Crane-Williams, director of the Austin Motor Car Company of Birmingham, England, recently sailed on R. M. S. Empress of Japan for the Orient after some days spent in Vancouver, B. C.

Talking on conditions concerning his company, he was most optimistic, stating that Eastern Canada had proven an excellent market for the British Austin product and that 14,000 employees of the factory were working full time to meet the demand, which was very much in excess of that of 1932.

ILLINOIS GLASS CO. TO BECOME HEAVIEST OWENS STOCKHOLDER

New York, May 16.—In line with its program for the retirement of all outstanding bonds and preferred stock by July 1, Owens-Illinois Glass Company yesterday announced that it will turn over to Illinois Glass Company 200,000 shares of its common stock in exchange for $1,200,000 of its own 5 per cent. debentures and 80,000 shares of its preferred stock held by that company, and that it will also purchase from the company an additional $800,000 of its debentures at par and accrued interest.

These holdings constitute the entire assets of Illinois Glass Company, which will, upon consummation of the transaction, become the largest holder of Owens-Illinois common stock, owning about 17 per cent. of the total to be outstanding.

At the close of 1932, Owens-Illinois had outstanding in senior securities $3,574,000 in ten-year 5 per cent. gold debentures, due in 1939, $494,000 in assumed 6 per cent. first mortgage bonds of Root Glass Company, and $8,300,000 in 6 per cent. cumulative preferred stock of $100 par value.

Since the end of the year the company issued an additional $200,000 of the 5 per cent. debentures, retired $105,000 of the Root Glass Company bonds and bought in $300,000 par value of its own preferred stock.

The remaining $1,774,000 of Owens-Illinois 5 per cent. debentures will be called for redemption on July 1 at $101.25 and accrued interest, while the remaining Root bonds will be retired on August 1, out of surplus funds now in the company's treasury. The final result will be that the company will have outstanding as its sole capitalization 1,200,000 shares of common stock.

The operation will not affect $2,500,000 in 5 per cent. first mortgage bonds of the Illinois Pacific Coast Company, which were assumed by Owens-Illinois Pacific Coast Company, a wholly owned subsidiary of Owens-Illinois Glass Company operating plants in San Francisco and Los Angeles.

The transaction with Illinois Glass Company was announced by William E. Levis, president of both that company and of Owens-Illinois Glass Company.

The latter company, which had 977,173 shares of common stock outstanding at the year end, last week made application for the listing on the New York Stock Exchange of 22,827 additional shares, issued in connection with the recent purchase of the O'Neill Machine Company of Toledo and the Hemingray Glass Company of Muncie, Ind.

TOLEDO EMPLOYMENT SHOWS SHARP INCREASE

Toledo, O., May 16.—Local plants allied with the automotive industry are reported to be employing 1,418 more workers than were engaged on April 1.

Employment here is said to have reached its highest mark since the bank holiday. A census of employment was taken in many plants, which revealed that about 300 workmen were recalled during the week. The first meeting in more than a year was held this week by the builders' supply dealers.

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday, Monday and Holidays, and Tuesday, When a Holiday Falls on Monday
AUTOMOTIVE DAILY NEWS PUBLISHING CORPORATION
350 Hudson St., New York, N. Y.
O. J. Elder, President, H. A. Tarantous, Vice-President, Alexander Johnston, Secretary.
Entered as second-class matter, August 27, 1925, at the post office at New York, N. Y., under the Act of March 3, 1879.
350 Hudson St., New York, N. Y. Telephone CA nal 6-1000

MEMBER A. B. C.

Mail subscriptions to CIRCULATION DEPARTMENT, 1926 Broadway. Telephone TR afalgar 7-4500

Subscription Rates: One year, $12.00; two years, $20.00, for United States and Canada, also Mexico, Cuba and Panama
To Other Countries: One year, $15.00; two years, $26.00. Single copies, 5 cents.

WEDNESDAY, MAY 17, 1933

ADVERTISING AND BUSINESS HEADQUARTERS
Harry A. Tarantous, Business Manager. 350 Hudson St., New York, N. Y.
B. B. Crighton, Assistant to Business Manager.
George M. Slocum, Manager, Detroit Bureau, 427 Fisher Building, Detroit, Mich.; phone Trinity 2-3500. Willard R. Cotton, Western Manager, 333 North Michigan Ave., Chicago, Ill.; phone Andover 2400. Metz B. Hayes, New England Manager, Little Building, Boston, Mass. Blanchard, Nichols & Coleman, American National Bank Building, San Francisco, Cal.; Lincoln Building, Los Angeles, Cal.; 1037 Henry Building, Seattle, Wash.
Address ALL advertising and business correspondence to 350 Hudson St., New York city.

EDITORIAL DEPARTMENT
350 Hudson St., New York, N. Y. Telephone CA nal 6-1000
Alexander Johnston, Editor. William C. Callahan, News Editor
Statistical Department (registrations and specifications), P. J. Robas, statistician. Engineering Department, Herbert Chase, engineering editor. Merchandising Department, Charles S. Zack, editor. Art Department, John Bauerfeld, director.
Detroit Bureau, Chris Sinsabaugh, editor, 427-8 Fisher Building, Detroit, Mich. Telephone Trinity 2-3500. Contributing editor, John C. Wetmore.

A Job for the Associations

IN President Roosevelt's recent address favoring relaxing of the anti-trust laws to permit companies in the same industry to co-operate, under government supervision, to end ruinous competition, we can discern a new job for the trade associations to tackle. In creating the machinery that will be necessary to promote this sort of controlled co-operation, the trade associations will undoubtedly be used.

In our own industry we have efficient and energetic trade associations perfectly well able to take this job in hand. The National Automobile Chamber of Commerce is acknowledged to be one of the most efficient trade organizations in the country; it has been given official recognition in this way. It would be a simple matter for the Federal authorities to work with the chamber to give the sort of co-operation within the vehicle building industry that will be necessary.

In the other divisions of automotive activity there are also trade associations capable of taking on this task. The M. E. A. and the N. S. P. A. are perfectly well qualified to do the job in their field. The tire industry has an energetic association; the battery manufacturers have their own trade body.

It is fortunate that our automotive industry has this structure of trade organizations, because, lacking this, it would be a task of real magnitude to arrange the fundamental method of handling co-operation under government auspices.

Inflation

In a current issue of the Daily Investment News there is an interesting story by Nelson Mills, who passed through the feverish period of inflation in Germany as manager for a very large American manufacturer of machines with plants in that country. Mr. Mills writes palpably to show Americans what inflation can be when it gets out of hand.

By way of pointing the moral of his tale he tells of leaving Paris when the mark was at 200,000 *to the dollar; of taking a forty-mile taxi ride at a cost of 7 cents in American money and sitting down to dinner at Frankfort to find from the menu that the mark had fallen to* 800,000 *to the dollar while he was en route.*

Mr. Mills watched the property, the savings of the German people melt in this crucible of inflation. He saw workers receive their wages and rush to spend them, only to find that the hurtling fall of the mark had deprived them of a large part of their earnings.

Mr. Mills concludes by saying: "It is only natural for one who has been through the experience in Germany to bear a feeling of gratitude toward President Roosevelt in the confidence that by taking matters completely out of the hands of seemingly reckless inflationists in Congress he will have swerved the country away from that which is extreme and dangerous."

During the momentous ten weeks that have passed since Franklin D. Roosevelt assumed the office of President he has given us action in greater degree than this country ever has had it in any similar period in its history. Yet he has not made any move that smacked of the reckless. He has asked for exceptional powers, but these are exceptional times. There is no suggestion, in what the President has done, that he has any intention of being carried into radical action, the effect of which can only be guess-work. The moves that he has made so far have been carefully considered. The powers to inflate which he has asked and been granted will probably be used more as a moral threat than for actual inflation. There is a considerable difference between controlled inflation and running the printing presses, as was done in Germany during her frenzy of the post-war period.

SOUTH AND ROCKY MT. STATES SHOW GAINS IN NEW CAR SALES

(Continued from Page 1)

port, among them some of the territory where sales were running well in April, it is possible that the sales figures for the whole country for the month may reverse the present position and show a gain. Some of the large industrial states still are out and until these report no final summing up can be made.

The following table shows the twenty-two states that have reported, divided into geographical sections, with their records this April and last:

	April, 1933	April, 1932
NEW ENGLAND		
N. Hamp.	684	821
Vermont	348	538
Totals	1,032	1,359
EAST		
Delaware	382	341
Maryland	1,549	1,860
W. Virginia	1,084	1,183
Totals	3,015	3,384
SOUTH		
Arkansas	594	409
Florida	1,165	847
Georgia	2,158	1,553
Louisiana	939	879
N. Carolina	1,601	1,427
S. Carolina	837	657
Virginia	1,298	1,758
Dist. of Col.	1,240	1,407
Totals	9,832	8,937
GREAT LAKES		
Illinois	8,132	7,982
Michigan	4,365	5,116
Minnesota	2,184	3,231
Wisconsin	2,834	3,064
Totals	17,515	19,393
MIDDLE WEST		
Kansas	521	1,042
N. Dakota	377	524
S. Dakota	171	410
Totals	1,069	1,976
ROCKY MOUNTAINS		
Idaho	285	242
Montana	795	702
Utah	380	281
Totals	1,460	1,225

STEEL PRICE RISE OF $2 A TON SEEN

(Continued from Page 1)

heard for several weeks. In the meantime many of the manufacturers have been able to continue the old prices because of their inventories of raw materials accumulated at lower prices.

These inventories now are low, however, and are being built up in order to avoid future shortages and also to guard against still higher commodity quotations. When the steel makers begin to dig into their new inventories for the manufacture of finished products, they will want and probably insist on higher prices.

There appears to be some question about whether the prices on tin plate will be maintained at the present level much longer. Not for many years has the price of this product been altered in the middle of the year. The price usually is fixed at the year end and remains for the next year.

This would have no effect on the tin can companies with orders placed sufficient for their needs for the rest of the year. If increased demand caused them to run short, however, they might have to pay more for their additional requirements.

From Youngstown yesterday came word that steel plants in that district started the week with operations at 40 per cent. of capacity, as against 25 per cent. a year ago and 42 per cent. two years ago.

Orders were said to be steadily increasing, with the prospect being for still higher rate of operations.

IN LARGER QUARTERS

Allentown, Pa., May 16.—The Lehigh Chevrolet Company has removed its salesroom and executive headquarters to larger and more commodious quarters at 635 Linden St. The new quarters provide the firm with one of the largest and finest showrooms in Pennsylvania.

In This Corner....

Opinions, suggestions, complaints, criticisms, grievances or what have you. Open to every one to say anything, anyhow, any time. The communications printed in this department represent the ideas and opinions of our readers. They are not necessarily ours. If you have something to say on any phase of automotive activity, wholesale, retail or abusive, let us hear from you and we will tell the world.

Likes Our Inquiring Reporter

Automotive Daily News: In this organization, not only one but several of us, follow the Daily News items very closely and get a lot of kick out of many of the news items and articles of interest furnished you for publication by distributors and dealers throughout the nation.

One of the particular items that we have closely followed pertains to suggestions and questions as to what can be done by the manufacturers, distributors and dealers to improve conditions of the automobile industry. We note suggestions coming from various dealers relative to a suggested advance in price, covering all models and makes of cars. With this we are in accord, but all leading and popular makers of cars would have to be in accord with this movement in order to get the desired results, namely, encouraging the general populace to buy cars now.

We think that it is generally agreed that all makes of cars are the lowest in price in the history of the automobile. We further feel that it is generally known that there are more obsolete and worthless units on the street today in proportion to the new cars, or better class of used cars, than ever before. Why would it not be an opportune time, if a price raise is contemplated, to get the manufacturers together on an agreement for the purpose of doing away with thousands of worthless and dangerous automobiles that are being operated today? If every manufacturer could be influenced to send a man through the territory, buying up at extremely low prices all old models possible and destroying them, so that there would be no salvage for the used car dealer or junk man. They would have to be broken up and burned up.

If, for example, 5,000 cars were destroyed during any one month, or in the period of one year, could not the expense of the purchase and destruction be divided, and added to the new units, which would be very small, and make an advance in price compulsory?

No one questions but what cars and trucks are too cheap. Hence, why not make a reasonable excuse and at the same time develop a market for many new units by destroying the obsolete at a very low cost, which would bring the new cars and the better class of used cars in demand, thereby increasing production and making it possible for the factories to give employment to many more people?

Surely a movement of this kind would be in keeping with our President's recent address, in which he invites and requests that the manufacturers co-operate with him in movements that will be beneficial for the labor industry.

FREEMAN & SONS, INC.,
Reo Distributor.
H. J. FREEMAN, President.
Miami, Fla.

A. H. SWAYNE NAMED BY ADVISORY COUNCIL OF ARBITRATION GROUP

(Continued from Page 1)

operation and assistance of trade associations in each field will also be sought.

Surveys already have been made of five industries, including the wool and garment trade, Stock Exchange firms, paper and pulp, tobacco and electrical manufacturing industries and others will go forward as soon as possible. In the woolen industry the survey shows that arbitration is functioning successfully under a plan in which both buyers and sellers participate, with a widespread use of arbitration clauses. Standard rules of procedure have been developed and are administered by an arbitration committee representing all branches of the trade.

Other chairmen appointed, in addition to Mr. Swayne, include Pell W. Foster, Jr., for the electrical and general machinery industry; J. T. McGovern, graphic arts; Alexander S. Banks, accounting; Arthur Notman, non-ferrous metals; F. Meredith Blagden, investment banking and Stock Exchange divisions; Henry C. Irons, building industry; Roy Durstine, advertising, and Aymer Crater, real estate.

STEEL AND PARTS TRADE BENEFITS BY CAR GAINS

(Continued from Page 1)

turning out parts of various kinds are working on good schedules for the first time in many months.

May reports on employment in the Detroit area will undoubtedly show improvement all along the line. This is being reflected in vehicle sales in this district, which have been held up since mid February, when the banking crisis started. The consensus of opinion here is that automotive sales will probably hold up through May and June in sufficient volume to cut rather deeply into the usual summer slump. Every one is looking for a real revival in the fall.

COMING EVENTS

MAY

20—**Newark, N. J.** Annual convention New Jersey Automotive Trade Association, Newark Athletic Club.

JUNE

8—**New York.** Annual meeting of National Automobile Chamber of Commerce.
12-15—**Boston, Mass.** National Association of Purchasing Agents, eighteenth annual International Convention and Informashow, Hotel Statler.
12-16—**Chicago.** American Oil Burner Association meeting, Stevens Hotel.
16-17—**Louisville, Ky.** American Automobile Association meeting.
18-July 3—**Bordeaux, France.** Automobile, nautical and aeronautical show.
26-30—**Chicago.** American Society of Mechanical Engineers, meeting.
26-30—**Chicago.** American Society for Testing Materials, meeting. Stevens Hotel.

JULY

1-4—**Chicago.** American Air Races, Municipal Airport.
10-14—**Chicago.** Automotive Engine Rebuilders Association, meeting.
16-18—**Chicago.** National Team and Motor Truck Owners' Association, thirty-first annual convention, Palmer House.

AUGUST

28-Sept. 24—**Chicago.** Chicago Society of Automotive Engineers, International Automotive Engineering Congress, Palmer House. (This meeting will be wide in scope to take in the activities previously covered in the summer meeting and the aeronautical meeting.)

SEPTEMBER

11-15—**Chicago.** American Chemical Society, meeting.
20-22—**Atlantic City, N. J.** National Petroleum Association, Traymore Hotel.
21-22—**Chicago.** National Association of Motor Bus Operators, Congress Hotel.

OCTOBER

.....—**Paris, France.** Twenty-seventh International Automobile Exhibit.
2-6—**Detroit, Mich.** National Metal Congress.
2-6—**Chicago.** National Safety Congress.
5-15—**Paris, France.** International Automobile Salon.
12-21—**London, England.** Twenty-seventh International Automobile and Motorboat Show.
23-28—**Chicago.** Motor and Equipment Manufacturers Association, National Automotive Maintenance Exposition, Herbert Buckman, manager.
24-26—**Chicago.** American Petroleum Institute, meeting.
27-28—**Chicago.** National Standard Parts Association, convention, Stevens Hotel.
30-Nov. 8—**Chicago.** National Standard Parts Association, trade show.

NOVEMBER

.....—**Chicago.** National Battery Manufacturers Association, fall meeting. (Date to be announced later).

Production—Engineering—Factory

Edited by Herbert Chase

SUITABILITY OF VARIOUS GEAR LUBRICANTS OUTLINED

By G. A. ZAMBONI

(Abstracts from a paper presented before the Northwest Section of the Society of Automotive Engineers)

Practically all gear lubricants are admixtures, and come under one of three classifications: Mineral lubricants, special gear "shields," and compounds.

Mineral oil because of its high heat-dissipating ability and low coefficient of internal friction makes it the best high-pitch-velocity lubricant.

Special gear "shields" are usually an all-petroleum product. The mineral oil is made semi-solid by being mixed with petroleum oxide which acts as a filler. This lubricant has high adhesive properties and low coefficient of internal friction, which makes it a very desirable lubricant for general gear drive application.

There are many admixtures of mineral and fixed oils which can properly be called compounds, but when refering to compounds as gear lubricants we generally refer to metal base compounds which are also known as extreme pressure lubricants.

Under conditions of average low peripherial speeds and extremely high unit pressures it is impossible or, at the best, extremely difficult to obtain perfect fluid friction. It has been for the lubrication of tooth profiles under such conditions that extreme-pressure lubricants have been developed.

The most popular and successful of all metal-base compounds for gear lubrication are those using a lead base. Lead oleate, is compounded into an admixture of mineral and fixed oils. Because of certain peculiar affinitive properties, this lead oleate will not precipitate out of solution. It is held in intimate combination with the oil.

When subjected to high unit pressure between the profiles, the finely divided particles of lead associate themselves with one or the other ate themselves with one or the other of the profiles, filling in the pores and depressions and covering up the original surface with a smooth layer of solid lubricant, which reduces the coefficient of friction by establishing a high anti-friction sliding surface. Upon this surface the oils in the compound set up a film of fluid friction. This compound does not have the internal friction of heavy viscos lubricants. It has high adhesive qualities, and

(Continued on Page 8)

WEIDENHOFF TAKES MOTO-VITA LINE

Joseph Weidenhoff, Inc., 4344-58 Roosevelt Road, Chicago, has taken over the exclusive distribution to the automotive trade of the Moto-Vita Combustion Indicator, made by the Moto-Meter Gauge and Equipment Company, Toledo, O.

Several models of the combustion indicator are available. Each is a complete and accurate piece of equipment for ascertaining the combustion efficiency of the modern high-speed, high compression type engine. Used in conjunction with the Weidenhoff Motor Analyzer the Moto-Vita Combustion Indicator makes an ideal and complete set-up for engine tuneup work.

PITTSBURGH SECTION S. A. E. MEETS MAY 18

Pittsburgh, May 16.—Announcement has just been made here of the final meeting for the season of the local section of the Society of Automotive Engineers, to be held at the Fort Pitt Hotel on May 18 following a dinner scheduled for 6.30 p. m. M. M. Dean and A. R. Ferguson, engineers of the Aluminum Company of America, will speak on the subject, "Recent Developments in the Field of Light Aluminum Alloy Truck Body and Tank Construction."

Entertainment and refreshments are to be provided and distribution of attendance awards made. There will also be an announcement of the election of officers for the year 1933-34. The retiring officers are C. R. Noll, chairman; Murray Fahnestock, vicechairman; R. N. Austern, treasurer; C. F. Kells, secretary.

Buffalo Section S. A. E. Hears Capt. A. W. Stevens

Buffalo, May 16.—At tonight's meeting of the Buffalo section of the Society of Automotive Engineers a program of outstanding merit has been arranged. The meeting will be held at the Hotel Statler at 8 o'clock. Through a series of fortunate circumstances it has been possible to schedule for this meeting an arroy of talent capable of making it one of the most interesting and highly instructive events ever staged before the Buffalo section.

Capt. Albert W. Stevens, Air Corps, U. S. A., and probably the world's foremost authority on aerial photography, will open the program with a talk on his work in this branch of the service. The discussion will be illustrated by colored lantern slide projections. Dr. H. C. Dickinson, president of the S. A. E., also will present a film on "Front

(Continued on Page 8)

Gough Is Eighth Marburg Lecturer

Dr. H. J. Gough, superintendent of the engineering department, National Physical Laboratory, England, has been chosen to deliver the Eighth Edgar Marburg lecture at the 1933 annual meeting of the American Society for Testing Materials in Chicago, June 26-30. The lecture is scheduled for Tuesday afternoon, June 27, at the Stevens in a session jointly sponsored by the society and Section M (engineering), American Association for the Advancement of Science. Dr. Gough will visit this country with the group of scientists from abroad who are coming on invitation of the Fair authorities and the A. A. A. S.

This lecture, which brings an outstanding scientist before the society each year, commemorates the name of the society's first secretary-treasurer, who, through his development of technical programs over a period of sixteen years, brought wide recognition to the society as a forum for the discussion of various phases of materials used in engineering. The lecture further emphasizes the importance of the society's work in promoting the knowledge of engineering materials.

Dr. Gough will lecture on "Crystalline Structures in Relation to Failure of Metals Especially by Fatigue." With a distinguished record as a scientist, he is known especially for his work in connection with the study of strength of single crystals. He is the leading investigator in the field of relation between atomic structure and practical strength of metals. He will outline some of the important work he has done

(Continued on Page 6)

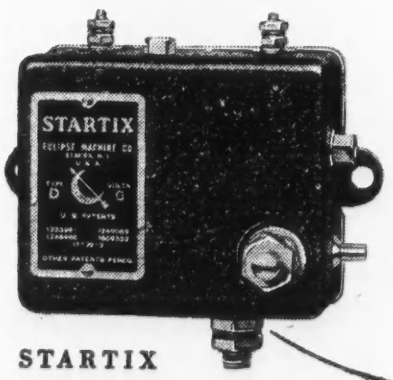
THE BENDIX DRIVE

"The Mechanical Hand That Cranks Your Car"

Cars that are easier to drive are easier to sell!

EVERY motor car merchant meets competition on practically every sale today... competition that fights it out step by step, point by point, feature by feature.

That's the kind of selling in which Startix pays its inexpensive way a dozen times over.



STARTIX
The Automatic Starting Switch

Ask any salesman who has Startix to talk about. He'll tell you, and show you, it has more appeal than some features which cost the manufacturer many times as much.

Just a turn of the switch-key, and Startix takes charge of the engine... starts it, repeats if the engine fails to continue running, restarts the engine if it stalls.

What an ideal team-mate for time-proved Bendix Drive, "the mechanical hand that cranks your car"! Standard on more than twenty million cars and trucks.

Startix and the Bendix Drive give automatic starting... cars with automatic starting are easier to drive and easier to sell.

ECLIPSE MACHINE COMPANY, Elmira, N. Y.
(Subsidiary of Bendix Aviation Corporation)

MAJOR SPECIFICATIONS AND MECHANICAL DETAILS

CORRECTED THE DAY SPECIFICATION CHANGES ARE MADE

MAKE AND MODEL	Weight—5-P. Sedan	Wheel Base	Engine Make	Cooling System Thermostat	Valve Arrangement	Cylinders	Bore and Stroke	Piston Disp.	Compression Ratio	Tax H. P.	Brake H. P. and Peak R. P. M.	Piston Make or Material	No. Main Br'gs	Oil Purifier	Fuel Cleaner	Air Cleaner	Carburetor	Carburetor Heat Control	Camshaft Drive	Ignition System
Auburn 8-101	3678	127	Lyc	Dole	L	8	3 x4¾	268.6	5.26	28.8	100@3400	*Alum	5	Pur-F	No	AC	Str	Man	Chain	Del-R
Auburn 8-105	4043	127	Lyc	Dole	L	8	3 x4¾	268.6	5.26	28.8	100@3400	*Alum	5	Pur-F	No	AC	Str	Auto	Chain	Del-R
Auburn 12-161	4465	133	Lyc	Dole	H	12	3⅛x4¼	391.1	5.50	46.8	160@3400	*Alum	4	Lyc	Ste	AC	Str	Man	Link	Del-R
Auburn 12-165	4955	133	Lyc	Dole	H	12	3⅛x4¼	391.1	5.50	46.8	160@3400	*Alum	4	Lyc	Ste	AC	Str	Man	Link	Del-R
Austin	§1120	75	Own	No	L	4	2.2x3	45.6	5.10	7.80	13@3400	Alum	2	No	No	No	Til	——	Gear	Aut-L
Buick 33-50	3705	119	Own	Har	O	8	2⅞x4¼	230.4	5.25	27.6	86@3200	†CI	5	AC	AC	AC	Mar	Auto	Tex	Del-R
Buick-33-60	4115	127	Own	Har	O	8	3⅛x4¾	272.6	5.25	30.0	97@3200	†CI	5	AC	AC	AC	Mar	Auto	Tex	Del-R
Buick 33-80	4505	130	Own	Har	O	8	3 5/16x5	344.8	4.80	35.1	113@3200	†CI	5	AC	AC	AC	Mar	Auto	Tex	Del-R
Buick 33-90	4645	138	Own	Har	O	8	3 5/16x5	344.8	4.80	35.1	113@3200	†CI	5	AC	AC	AC	Mar	Auto	Tex	Del-R
Cadillac V-8—355 C	5015	134-140	Own	No	L	8	3⅜x4 1/16	353.0	5.40	36.4	115@3000	†CI	3	AC	AC	AC	Own	No	Morse	Del-R
Cadillac V-12—370 C	5395	134-140	Own	No	O	12	3⅛x4	368.0	5.60	46.9	135@3400	†CI	4	Cuno	AC	AC	DL-2	No	Morse	Del-R
Cadillac V-16—452 C	5785	143-149	Own	No	O	16	3 x4	452.0	5.70	57.5	165@3400	CI	5	Cuno	AC	AC	DL-2	No	Morse	Del-R
Chevrolet Master 6	2895	110	Own	No	O	6	3 5/16x4	206.8	5.20	26.3	65@2800	CI	3	No	AC	AC	Car	Auto	Gear	Del-R
Chevrolet Standard 6	§§2425	107	Own	No	O	6	3 5/16x3½	180.9	5.20	26.3	60@3000	CI	3	—	—	Yes	Car	Man	Gear	Del-R
Chrysler Six	3113	117	§Own	B&B	L	6	3¼x4½	224.0	5.35	25.3	83@3400	Alum	4	Pur	AC	AC	*Str	Auto	Morse	Del-R
Chrysler Royal 8	3473	120	§Own	B&B	L	8	3¼x4⅛	273.8	5.20	33.8	90@3400	Alum	5	Pur	AC	AC	*Str	Auto	Morse	Del-R
Chrysler Imperial 8	†3864	126	§Own	Pines	L	8	3¼x4½	298.6	6.20	33.8	108@3400	Alum	5	Pur	AC	AC	*Str	Auto	Morse	Del-R
Chrysler Imp. Cust. Eight	——	146	Own	Pines	L	8	3½x5	384.8	5.80	39.2	135@3200	*Alum	9	Pur	AC	AC	*Str	Auto	Morse	Del-R
Continental Beacon	2160	101½	Own	Dole	L	4	3⅜x4	143.1	5.05	18.2	40@2700	CI	3	No	AC	Hol	Mar	No	Link	Aut-L
Continental Flyer	——	107	Own	Dole	L	6	3 x4	169.6	5.21	21.6	65@3500	CI	4	No	AC	Hol	Mar	No	Link	Aut-L
Continental Ace	——	114	Own	Dole	L	6	3⅜x4	214.7	5.23	27.3	85@3600	Alum	4	AC-F	AC	AC	Til	——	Morse	Aut-L
De Soto Six	——	114⅜	§Own	B&B	L	6	3¼x4⅜	217.8	5.35	25.3	79@3400	Alum	4	Pur	AC	AC	**B&B	Auto	Morse	Del-R
Dodge D. P. Six	2683	115	§Own	B&B	L	6	3⅛x4⅜	201.3	5.50	23.4	75@3600	*Alum	4	Pur	AC	AC	Str	Auto	Morse	Del-R
Dodge D. O. Eight	3576	122	§Own	B&B	L	8	3¼x4¼	282.1	6.20	33.8	92@3400	Alum	5	Pur	AC	AC	*Str	Auto	Morse	Del-R
Essex Terraplane 6	2330	106-113	Own	Th-Sy	L	6	2 1/16x4¾	193.0	5.80	20.7	70@3200	Alum	3	No	AC	Bur	Car	Man	Tex	Aut-L
Essex Terraplane 8	2640	113	Own	Th-Sy	L	8	2 1/16x4½	243.9	5.80	27.6	94@3200	Alum	5	No	AC	Mon	*Car	Man	Tex	Aut-L
Ford A Model 46	2332	112	Own	No	L	4	3⅞x4¼	200.5	4.60	24.0	50@2800	Alum	3	No	Own	No	Zen	No	Var-G	Aut-L
Ford V-8 Model 40	2575	112	Own	No	L	8	3 1/16x3¾	221.0	6.33	30.0	82@3900	Alum	3	No	Own	No	DL	No	Var-G	Own
Franklin Series 16	4403	132	Own	O-S	O	6	3½x4¾	274.0	5.12	29.4	100@3100	*Alum	7	Pur	AC	AC	Str	No	Chain	Del-R
Franklin Series 17	5640	144	Own	O-S	O	12	3⅛x4	398.0	5.12	50.7	150@3100	*Alum	7	Pur	AC	AC	Str	No	Link	Del-R
Franklin Olympic Series 18	3625	118	Own	O-S	O	6	3½x4¾	274.0	5.12	29.4	100@3100	*Alum	7	Pur	AC	AC	Str	No	Chain	Del-R
Graham Standard Six	3265	113	Own	Dole	L	6	3¼x4½	224.0	6.50	25.3	85@3400	*Alum	7	—	AC	AC	DL	Man	Link	Del-R
Graham Stand.-Cust. Eight	‡‡	119-123	Own	Dole	L	8	3⅛x4	245.4	6.50	31.2	95@3400	*Alum	5	AC	AC	AC	DL	Man	Link	Del-R
Hudson Super-Six	2980	113	Own	Th-Sy	L	6	2 1/16x4¾	193.0	6.20	20.7	73@3200	Alum	3	No	AC	AC	Mar	Man	Tex	Aut-L
Hudson Eight	3345	119-132	Own	Th-Sy	L	8	3 x4½	254.1	5.80	28.8	101@3600	Alum	5	No	Ste	AC	Mar	Auto	Morse	Aut-L
Hupmobile 321	3350	121	Own	B&B	L	6	3⅜x4¼	228.1	5.75	27.3	90@3400	*Alum	4	Han	Ste	AC	Car	Man	Chain	Aut-L
Hupmobile 322	3550	122	Own	B&B	L	8	3 x4⅝	261.5	5.47	28.8	93@3600	Alum	5	Pur	Ste	AC	Str	Man	Morse	Aut-L
Hupmobile 326	3785	126	Own	B&B	L	8	3 1/16x4¾	303.2	5.34	32.5	109@3500	Alum	5	Pur	Ste	AC	Str	Man	Morse	Aut-L
La Salle V-8—345 C	4860	130-136	Own	None	L	8	3⅜x4 1/16	353.0	5.40	36.4	115@3000	†CI	3	AC	AC	AC	Own	No	Morse	Del-R
Lincoln V-12	5270	136	Own	—	L	12	3 x4½	381.7	5.50	43.2	125@3400	Alum	4	No	AC	AC	Str-2	No	Chain	Aut-L
Lincoln V-12	5790	145	Own	—	L	12	3¼x4½	448.0	5.25	50.7	150@3400	Alum	7	No	AC	AC	Str-2	No	Chain	Aut-L
Marmon Sixteen	5360	145	Own	Pines	O	16	3⅛x4	490.8	5.75	62.5	200@3400	Alum	5	AC-F	AC	AC	Str	Man	Diam	Del-R
Nash Big Six	——	116	Own	B&B	L	6	3¼x4⅝	217.7	5.30	25.3	75@3200	Alum	7	Yes	Yes	Yes	Str	Auto	Chain	Aut-L
Nash Standard Eight	3200	116	Own	B&B	L	8	3 x4⅝	247.4	5.10	28.8	80@3200	Alum	9	Yes	Yes	Yes	Str	Auto	Chain	Aut-L
Nash Special Eight	3400	121	Own	B&B	L	8	3 x4⅜	247.4	5.10	28.8	85@3200	Alum	9	Yes	Yes	Yes	Str	Man	Chain	Aut-L
Nash Adv. Twin Ignition 8	3870	128	Own	B&B	O	8	3⅛x4¼	260.8	5.25	31.2	100@3400	Alum	9	Yes	Yes	Yes	Str	Man	Chain	*Aut-L
Nash Am. Twin Ignition 8	*	133-142	Own	B&B	O	8	3⅜x4½	322.0	5.25	36.4	125@3600	Alum	9	Yes	Yes	Yes	Str	Man	Chain	*Aut-L
Oldsmobile Six	3110	115	Own	Har	L	6	3⅜x4⅛	221.4	5.30	27.3	80@3200	†CI	4	AC	AC	AC	*Str	Auto	Chain	Del-R
Oldsmobile Eight	——	119	Own	Har	L	8	3 x4¼	240.3	5.50	28.8	90@3350	†CI	5	AC	AC	AC	*Str	Auto	Chain	Del-R
Packard Eight	4900	136	Own	Pines	L	8	3 5/16x5	320.0	6.00	32.5	120@3200	*Alum	9	Yes	Yes	AC	*Str-2	Auto	Morse	NE
Packard Super Eight	5125	142	Own	Pines	L	8	3½x5	384.8	6.00	39.2	145@3200	*Alum	9	Yes	Yes	AC	*Str-2	Auto	Morse	NE
Packard Twelve	5700	147	Own	Pines	L	12	3 7/16x4	445.5	6.00	56.7	160@3200	*Alum	4	Yes	Yes	AC	*Str-2	No	Chain	NE
Pierce-Arrow 836	4660	136-139	Own	Pines	L	8	3½x4¾	366.0	5.50	39.2	135@3400	*Alum	9	Pur-F	Ste	AC	Str	Auto	Chain	Del-R
Pierce-Arrow 1236	4892	136-139	Own	Pines	L	12	3⅜x4	429.0	6.10	54.6	160 1/16@3400	*Alum	7	Pur-F	Ste	AC	Str	Auto	Chain	Del-R
Pierce-Arrow 1242-7	——	137-142-7	Own	Pines	L	12	3½x4	462.0	6.00	58.8	175@3400	*Alum	7	Pur-F	Ste	AC	Str	Auto	Chain	Del-R
Plymouth Six	2523	112	§Own	—	L	6	3⅛x4⅛	189.8	5.50	23.4	70@3600	Alum	4	Yes	Yes	Yes	*B&B	Auto	Morse	Del-R
Pontiac Straight Eight	2935	115	Own	Own	L	8	3 3/16x3½	223.4	5.70	32.6	75@3600	†CI	5	No	AC	AC	Car	Auto	Morse	Del-R
Reo Flying Cloud	3540	117½	Own	Dole	L	6	3⅜x5	268.0	5.30	27.3	85@3200	Alum	7	Pur	AC	—	*Str	Auto	Morse	Del-R
Reo Royale	4725	131	Own	Dole	L	8	3⅜x5	358.0	5.30	36.4	125@3300	Alum	9	Han	AC	—	*Sch	Man	Morse	Del-R
Rockne Six Model 10	2675	110	Own	Dole	L	6	3⅛x4⅛	189.8	5.50	23.4	70@3200	†CI	4	No	AC	No	Str	Man	Morse	Aut-L
Studebaker 6-56	3310	117	Own	B&B	L	6	3¼x4⅝	230.0	5.50	25.4	85@3200	†CI	4	No	Ste	AC	*Str	Auto	Cel	Del-R
Studebaker Com. 8-73	3385	117	Own	B&B	L	8	3 1/16x4	236.0	5.50	30.0	100@3800	†CI	9	Pur	Ste	UN	*Str	Auto	Cel	Del-R
Studebaker President 8-82	3640	125	Own	B&B	L	8	3 1/16x4¼	250.0	5.50	30.0	110@3600	*Alum	9	Pur	AC	UN	*Str	Auto	Cel	Del-R
Studeb'r Pres. Spdw. 8-92	4380	135	Own	B&B	L	8	3½x4⅜	337.0	5.50	39.2	132@3400	*Alum	9	Han	AC	UN	*Str	Auto	Cel	Del-R
Stutz LAA	4383	127½	Own	Pines	O	6	3⅜x4½	241.5	5.50	27.3	85@3150	*Alum	7	Un	AC	Pur	Zen	Man	Link	Del-R
Stutz SV-16	4885	134½-145	Own	Pines	O	8	3⅜x4½	322.0	5.50	36.4	113@3300	*Alum	9	AM	AC	Pur	Zen	Man	Link	Del-R
Stutz DV-32	*5281	134½-145	Own	Pines	O	8	3⅜x4½	322.0	5.00	36.4	156@3900	*Alum	9	AC	Ste	Pur	Str	Auto	Link	Del-R
Willys 77	——	——	——	§Own	None	L	4	3⅛x4⅝	134.2	5.13	15.6	48@3200	CI	3	—F	AC	AC	Til	Man	Chain	Aut-L
Willys 99	——	——	——	§Own	Var	L	6	3 1/16x4⅛	213.3	5.00	26.3	80@3400	CI	4	—F	AC	AC	Til	Man	Link	Aut-L

Gough Is Eighth Marburg Lecturer

(Continued from Page 5)

and discuss the interesting conclusions drawn therefrom. One of the problems on which leading metallurgists and scientists are constantly working is an attempt to gain an understanding of the true nature of metals. While much fundamental research is required before physical properties can be explained by simple laws, a good deal of work has been done. The basic problem is the dependence of the strength and other leading properties of metals on cohesive forces.

Dr. Gough has been awarded several degrees by English universities and he is a member of many of the leading English scientific societies.

A summary of Dr. Gough's lecture follows:

Investigations of the mechanical properties of metals in relation to their crystalline structure are proving to be of great scientific and industrial importance. A knowledge of the true nature of metals, established on a sure foundation, should result, for example, in useful new alloys for the service of man and an appreciation of the most appropriate methods of their production and treatment. Much fundamental research is required before the physical properties of metals can be expressed by simple laws, but a useful start in this direction has been made. The basic problem is the dependence of the strength and other related properties of metals on the ultimate cohesive forces of which so little is known at present. The plastic deformation that normally precedes rupture is most important.

There are difficulties in deriving knowledge of the nature of the ultimate cohesive forces, analytically, from the results of tests on materials. An alternative method is the one by which the behavior of actual materials is reproduced in theoretical models based on assumed laws of force. Illustrations of the latter method are given in the lecture and the importance of the Cauchy relations is emphasized. A very brief review of more recent work on the ultimate nature of cohesion in relation to the wave mechanics view of matter is also attempted.

All atoms, even of the most complex kinds, have a tendency to group into regular assemblages; the theoretical basis for this grouping and the simplification that it permits is indicated. Practical crystals fail to achieve this perfect regularity of structure and the modification of behavior which may thereby result is discussed, together with some theoretical explanations of the asymmetry which have been advanced. Some remarks on the "amorphous" state are also offered.

The mechanical properties of single crystals are discussed in detail.

Elastics constants are very important in the fundamental theory. The mechanism of distortion, by slip and twinning, of single crystals of metals and sumple alloys under simple stressing systems is summarized briefly and attention is directed to the important associated phenomena such as hardening, and to essential differences which distinguish metals. Mention is made of the observed effect of boundaries upon specimens consisting of several large crystals. The degree by which the structure of polycrystalline materials deformed by cold processes, such as rolling, drawing, extrusion, etc., can be correlated to the mechanism of distortion of single crystals, is summarized. Various theories advanced for the stress conditions governing the plastic limit and plastic flow in polycrystalline metals are reviewed and reference made to the results of recent static and fatigue experiments, and to the heat developed during plastic flow.

An account is then given of an extensive investigation into the fatigue characteristics of single crystals. Studies have been made of the deformation and fracture of metals conforming to three representative space lattices and to one more complex lattice. It is shown that the mechanism of deformation under fatigue stresses is essentially similar to that governing the distortion of single crystals under static forces; considerable information was also acquired regarding twinning characteristics. Experiments made on two crystals tested under combined stresses showed that the process of deformation was determined entirely by the range of shear stress; the propagation of fatigue cracks was affected by normal stresses. Tests made on three specimens each consisting of two large crystals are the basis of a discussion of the nature of their failure and the effect of the crystal boundaries. Experiments on the behavior of single crystals under "corrosion-fatigue" are described.

Failure of metals, whether by static, impulsive, or fatigue stressing, and by "corrosion-fatigue" action may be closely associated with initial deviations from the primary lattice structure and with the phenomena, such as crystal breakup and lattice distortion, which are associated with strain-hardening. X-ray evidence on the nature of hardening is discussed. All failures of crystalline materials are intimately associated, and must eventually be correlated, with the cohesive forces. A most promising field of future research lies in this direction.

W. F. CHAMBERLAIN JOINS EDWARDS MOTOR COMPANY

Milwaukee, Wis., May 16.—W. F. Chamberlain, formerly branch manager for General Motors Truck Company in Milwaukee, has become associated with Edwards Motor Company as manager of the truck department. He will handle sales of the entire line of Dodge trucks for the Edwards Company. Mr. Chamberlain was connected with the truck division of General Motors for eleven years and was stationed in Milwaukee for the last three years.

OF PRESENT AMERICAN PASSENGER CAR CHASSIS

CORRECTED THE DAY SPECIFICATION CHANGES ARE MADE

MAKE AND MODEL	Generator and Starter	Automatic Starter	Clutch	Automatic Clutch Control	*Transmission Make	Free Wheeling Make	Universals	Rear Axle	Ratio	Final Drive—Type	BRAKES Make	BRAKES Type	BRAKES Amplifier	Steering Gear Make	SPRINGS Rear Type	SPRINGS Rear Length	Spring Shackles	Chassis Lubrication	Tires
Auburn 8-101	*Del-R	*B-S	Long	No	DG	LGS	U	Col ½	4.70	Sp	Mid	Mech	—	Ross	S	56¾	Own	Bijur	17x5.50
Auburn 8-105	*Del-R	*B-S	Long	No	DG	LGS	U	Col ½	3.40	Sp	Ben	Hyd	—	Ross	S	56¾	Own	Bijur	17x6.00
Auburn 12-161	*Del-R	*B-S	Long	No	DG	LGS	M	Col ½	4.08	Sp	Ben	Hyd	—	Ross	S	56¾	Own	Bijur	17x6.00
Auburn 12-165	*Del-R	*B-S	Long	No	DG	LGS	M	Col ½	3.04	Sp	Ben	Hyd	B-K	Ross	S	56¾	Own	Bijur	17x6.50
Austin	*Aut-L	—	Own	No	Own	None	S	Sal ½	5.25	Sp	Own	Mech	—	Own	Cant	22⅞	——	Al-Z	18x3.75
Buick 33-50	Del-R	—	Own	Ben	Own	None	O	Own ½	4.70	Sp	Own	Mech	—	Sag	S	56	Own	Al-Z	17x6.00
Buick 33-60	Del-R	—	Own	Ben	Own	None	O	Own ¾	4.60	Sp	Own	Mech	—	Sag	S	55¾	Own	Al-Z	17x6.50
Buick 33-80	Del-R	—	Own	Ben	Own	None	O	Own ¾	4.27	Sp	Own	Mech	—	Sag	S	58⅞	Own	Al-Z	17x7.00
Buick 33-90	Del-R	—	Own	Ben	Own	None	O	Own ¾	4.36	Sp	Own	Mech	—	Sag	S	58⅞	Own	Al-Z	17x7.00
Cadillac V-8—355 C	Del-R	No	Own	†Ben	Own	None	S	Own ¾	4.60	Sp	Own	Mech	B-K	Sag	S	58	Own	Alem	17x7.00
Cadillac V-12—370 C	Del-R	—	Own	†Ben	Own	None	S	Own ¾	4.80	Sp	Own	Mech	B-K	Sag	S	58	Own	Alem	17x7.50
Cadillac V-16—452 C	Del-R	—	Own	†Ben	Own	None	S	Own ¾	4.64	Sp	Own	Mech	B-K	Sag	S	60	Own	Alem	17x7.50
Chevrolet Master 6	Del-R	D-St	Own	No	Own	LGS	O	Own ½	4.11	Sp	Own	Mech	—	Sag	S	54	Tryon	Alem	18x5.25
Chevrolet Standard 6	*Del-R	No	Own	No	Own	None	O	Own ½	4.11	Sp	Own	Mech	—	Sag	S	54	——	——	17x5.25
Chrysler Six	Del-R	—	Borg	†Ben	Own	NP	U	Own ½	4.38	Sp	Lock	Hyd	—	Gem	S	53⅜	Sil-U	Al-Z	17x5.50
Chrysler Royal 8	Del-R	—	Borg	Ben	Own	NP	U	Own ½	4.30	Sp	Lock	Hyd	—	Gem	S	53⅜	Sil-U	Al-Z	17x6.00
Chrysler Imperial 8	Del-R	—	Borg	Ben	Own	NP	U	Own ½	4.30	Sp	Lock	Hyd	B-K	Gem	S	54¾	——	Al-Z	17x6.50
Chrysler Imp. Cust. Eight	Del-R	—	Borg	Ben	Own	NP	U	Own ½	4.10	Sp	Lock	Hyd	B-K	Gem	S	57½	——	Al-Z	17x7.50
Continental Beacon	Aut-L	—	Rock	No	WG	——	S	NP ½	4.33	Sp	Mid	Mech	—	Sag	Cant-2	27 5/16	Sil-U	Al-Z	17x5.25
Continental Flyer	Aut-L	—	Rock	No	WG	——	S	NP ½	4.33	Sp	Mid	Mech	—	Sag	Cant-2	27 5/16	Sil-U	Al-Z	17x5.25
Continental Ace	Aut-L	—	Borg	Yes	WG	WG	S	NP ½	4.30	Sp	Mid	Mech	—	Ross	S	55½	——	Al-Z	17x5.50
De Soto Six	Del-R	—	Borg	†Ben	Own	NP	U	Own ½	4.38	Sp	Lock	Hyd	—	——	S	53⅜	Sil-U	Al-Z	17x5.50
Dodge Six	Del-R	—	Borg	†Ben	Own	NP	S	Own ½	4.38	Sp	Lock	Hyd	—	——	S	53½	Sil-U	Al-Z	16x6.00
Dodge Eight	Del-R	—	Borg	Ben	Own	NP	S	Own ½	4.30	Sp	Lock	Hyd	—	Gem	S	55	Sil-U	Al-Z	17x6.50
Essex Terraplane 6	*Aut-L	—	Own	Ben	Own	——	S	Own ½	4.59	Sp	Ben	Mech	—	Gem	S	48	Tryon	Alem	16x6.00
Essex Terraplane 8	*Aut-L	—	Own	Ben	Own	——	S	Own ½	4.59	Sp	Ben	Mech	—	Gem	S	48	——	Al-Z	16x6.00
Ford A Model 46	*Aut-L	—	Long	No	Own	——	O	Own ¾	4.11	Sp	Own	Mech	—	Gem	S-Tr	46	Own	Al-Z	17x5.50
Ford V-8 Model 40	*Aut-L	—	Long	No	Own	——	O	Own ¾	4.11	Sp	Own	Mech	—	Gem	S-Tr	46	Own	Al-Z	17x5.50
Franklin Series 16	Del-R	B-S	Br-L	No	WG	WG	S	Own ½	4.73	Sp	Lock	Hyd	—	Gem	F	—	——	Al-Z	19x6.50
Franklin Series 17	Del-R	—	Long	No	WG	WG	S	Own ½	4.45	Sp	Lock	Hyd	—	Ross	S	60	Fafnir	Al-Z	17x7.50
Franklin Olympic Series 18	Del-R	B-S	Long	No	WG	WG	S	Own ½	4.30	Sp	Lock	Hyd	—	Ross	S	55	Tryon	Al-Z	17x6.00
Graham Standard Six	Del-R	—	Long	—	WG	WG	S	Sal ½	4.27	Sp	Lock	Hyd	——	Ross	S	54	ERS	Al-Z	17x5.50
Graham Stand.-Cust. Eight	Del-R	—	Long	—	WG	WG	S	Sal ½	4.27	Sp	Lock	Hyd	——	Ross	S	54	ERS	Al-Z	17x6.00
Hudson Super Six	*Aut-L	B-S	Own	†Ben	Own	WG	S	Own ½	4.64	Sp	Ben	Mech	——	Gem	S	54⅛	Own	Alem	18x5.25
Hudson Eight	Aut-L	B-S	Own	Ben	Own	WG	S	Own ½	4.64	Sp	Ben	Mech	B-K	Gem	S	54⅛	Own	Alem	17x6.00
Hupmobile 321	*Aut-L	—	Borg	No	WG	WG	S	Sal ½	4.73	Hy	Mid	Mech	——	Ross	S	56	Sil-U	Al-Z	17x6.00
Hupmobile 322	*Aut-L	—	Borg	No	WG	WG	U	Own ½	4.36	Hy	Mid	Mech	——	Gem	S	57½	Rub	Al-Z	17x6.00
Hupmobile 326	*Aut-L	—	Long	No	DG	DG	U	Own ½	4.36	Hy	Mid	Mech	——	Gem	S	57½	Rub	Al-Z	17x6.50
La Salle V-8—345 C	Del-R	No	Own	†Ben	Own	No	S	Own ¾	4.60	Sp	Own	Mech	B-K	Sag	S	58	Own	Alem	17x7.00
Lincoln V-12	Aut-L	No	Long	No	Own	——	S	Tim F	4.58	Sp	Ben	Mech	B-K	Gem	S	58	Own	Alem	18x7.00
Lincoln V-12	Aut-L	No	Long	No	Own	Own	S	Tim F	4.58	Sp	Ben	Mech	B-K	Gem	S	62	Own	Alem	18x7.50
Marmon Sixteen	Del-R	—	Russ	No	Mun	No	S	Sal ½	3.78	Sp	Ben	Mech	B-K	Ross	S	59½	**	Al-Z	18x7.00
Nash Big Six	*Aut-L	B-S	Borg	No	Own	†DG	O	Own ½	4.70	Sp	Mid	Mech	——	Ross	S	54	Sil-U	Alem	17x5.50
Nash Standard Eight	*Aut-L	B-S	Borg	No	Own	DG	O	Own ½	4.44	Sp	Mid	Mech	——	Ross	S	54	Yes	Alem	17x5.50
Nash Special Eight	*Aut-L	B-S	Borg	No	Own	DG	O	Own ½	4.44	Sp	Mid	Mech	——	Ross	S	54	Rub	Alem	18x6.50
Nash Adv. Twin Ignition 8	*Aut-L	B-S	Borg	No	Own	DG	O	Own ½	4.71	Wo	Ben	Mech	——	Gem	S	55¾	Own	Bijur	17x6.50
Nash Am. Twin Ignition 8	*Aut-L	B-S	Borg	No	Own	DG	O	Own ½	4.50	Wo	Ben	Mech	——	Gem	S	57⅛	Own	Bijur	18x7.00
Oldsmobile Six	Del-R	No	Borg	Ben	Own	None	S	Own ½	4.56	Sp	Ben	Mech	——	Sag	S	24	Sil-U	Al-Z	17x5.50
Oldsmobile Eight	Del-R	—	Borg	Ben	Own	None	S	Own ½	4.56	Sp	Ben	Mech	——	Sag	S	54½	Sil-U	Al-Z	17x6.00
Packard Eight	*Dyn	B-S	Long	†Ben	Own	None	S	Own ½	4.36	Hy	Ben	Mech	B-K	Own	S	56	Own	Bijur	17x7.00
Packard Super Eight	*Dyn	B-S	Long	†Ben	Own	None	S	Own ½	4.69	Hy	Ben	Mech	B-K	Own	S	60½	Own	Bijur	17x7.00
Packard Twelve	*Dyn	B-S	Long	†Ben	Own	None	S	Own ½	4.69	Hy	Ben	Mech	B-K	Gem	S	60½	Own	Bijur	17x7.50
Pierce-Arrow 836	*Del-R	B-S	Long	No	Own	WG	U	Own F	4.29	Wo	SW	Mech	SWM	Ross	S	60	Fafnir	Myers	17x7.00
Pierce-Arrow 1236	*Del-R	B-S	Long	No	Own	WG	U	Own F	4.43	Wo	SW	Mech	SWM	Ross	S	60	Fafnir	Myers	17x7.00
Pierce-Arrow 1242-7	*Del-R	B-S	Long	No	Own	WG	S	Own ½	4.58	Hy	SW	Mech	SWM	Ross	S	61	Fafnir	Myers	17x7.50
Plymouth Six	Del-R	—	Borg	†Ben	Own	NP	—	Own ½	4.38	Sp	Lock	Hyd	——	——	S	53	Sil-U	Al-Z	17x5.25
Pontiac Straight Eight	*Del-R	D-St	Own	No	Own	None	O	Own ½	4.44	Sp	Own	Mech	——	Sag	S	24	††	Al-Z	16x6.00
Reo Flying Cloud	*Del-R	—	Own	No	Own	Own	U	Own ½	4.30	Sp	Lock	Hyd	——	Ross	S	55½	Sil-U	Al-Z	17x6.00
Reo Royale	*Del-R	—	Long	No	Own-A	None	O	Own ½	4.42	Sp	Lock	Hyd	——	Ross	S	57½	Own	Al-Z	18x6.50
Rockne Six Model 10	*Aut-L	B-S	Borg	No	WG	WG	M	Sal ½	4.55	Sp	Ben	Mech	None	Ross	S	54	Tryon	Al-Z	17x5.25
Studebaker 6-56	*Del-R	B-S	Long	No	Own	Own	M	Own ½	4.36	Sp	Ben	Mech	—	Ross	S	54	Fafnir	Al-Z	17x5.50
Studebaker Com. 8-73	*Del-R	B-S	Long	No	Own	Own	M	Own ½	4.36	Sp	Ben	Mech	B-K	Ross	S	54	Fafnir	Al-Z	17x6.00
Studebaker President 8-82	*Del-R	B-S	Long	No	Own	Own	U	Own ½	4.73	Sp	Ben	Mech	B-K	Ross	S	56	Fafnir	Al-Z	17x6.50
Studeb'r Pres. Spdw. 8-92	*Del-R	B-S	Borg	No	Own	Own	U	Own ½	4.31	Sp	Ben	Mech	B-K	Ross	S	60	Fafnir	Al-Z	17x7.00
Stutz LAA	*Del-R	—	Borg	No	DG	——	U	Sal ½	5.00	Wo	Lock	Hyd	B-K	Gem	S	60	Own	Bijur	19x6.50
Stutz SV-16	*Del-R	D-St	Long	Ben	Mun	——	M	Tim ½	4.75	Wo	Lock	Hyd	B-K	Gem	S	62¾	Own	Bijur	*18x7.00
Stutz DV-32	*Del-R	D-St	Long	Ben	Mun	——	M	Tim ½	4.50	Wo	Lock	Hyd	B-K	Gem	S	62¾	Own	Bijur	*18x7.00
Willys 77	*Aut-L	—	Own	No	Own	——	U	Own ½	4.40	Sp	Ben	Mech	——	Sag	S	46	Tryon	Al-Z	17x5.50
Willys 99	*Aut-L	—	Own	No	Own	WG	U	Own ½	4.30	Sp	Ben	Mech	——	Gem	S	51	Tryon	Al-Z	17x5.50

KEY TO SYMBOLS AND ABBREVIATIONS

Weight—‡Austin standard 2 passenger coupe. †5 sedan with wire wheels. *Nash 5 passenger sedan on the 133-inch wheelbase weighs 4,350; on the 142-inch wheelbase 4,510. *Stutz D. V. 145-inch wheelbase weighs 5,352 pounds. ‡‡Graham standard 8 sedan weighs 3500 with five wire wheels; custom 8 sedan 3,695 with five wire wheels. §§Chevrolet, weight of 5-passenger coach.

Engine—Lyc, Lycoming Motors Corporation. §Floating power.

Cooling System—B & B, Bishop & Babcock; Dole, Dole Valve Company; Ful, Fulton Company; Har, Harrison Radiator Corporation; O-S, cooling by air, own automatic shutter; Th-Sy, Thermo-Syphon; Var, various makes.

Valve Arrangement—H, horizontal; L, L head; O overhead.

Pistons (make or material)—Alum, aluminum alloy; *Alum, aluminum with invar strut; CI, cast iron; †C I, electro-plated.

Oil Purifier—AC, AC Spark Plug Company; Cuno, Cuno Engineering Corporation; Han, Handy Cleaner Corporation; Pur, Purolator-Motor Improvements, Inc.; F, Float-O attachment, Taylor Sales Engineering Corporation.

Fuel Cleaner—AC, AC Spark Plug Company; Ste, Stewart Warner Corporation.

Air Cleaner—AC, AC Spark Plug Company; Bur, The Burgess Battery Company; Hol, Holley Carburetor Company; Mon, Monroe Auto Equipment Company; Un, United.

Carburetor—*B&B, Ball & Ball, designed by Chrysler and made by Carter Carburetor Company; Car, Carter Carburetor Company; DL, Detroit Lubricator Company; Mar, Marvel Carburetor Company; Str, Bendix Stromberg Carburetor Company; Til, Tillotson Mfg. Company; Zen, Zenith Detroit Company; *Equipped with automatic choke.

Carburetor Heat Control—Auto, automatic; Man, manual.

Camshaft Drive—Cel, Celeron; Link, Link Belt; Morse, Morse Chain Company; Tex, Textolite; Var-G, various gears.

Ignition System—Aut-L, Electric Auto Lite Company; Del-R, Delco Remy Corporation; Mal, Mallory Electric Company; NE, North East-Delco Appliance Corporation. *Twin ignition systems.

Generator and Starter—Aut-L, Electric Auto Lite Company; Del-R, Delco Remy Corporation; Dyn, Owen Dyneto Corporation. *Equipped with Bendix drive.

Automatic Starter—B-S, Bendix Startix; D-St, Delco Starterator. *Startix standard equipment on all 8-105 and 12-165 salon models and on custom models of 8-101 and 12-161 line.

Clutch—Borg, Borg & Beck; Br-L, Brown-Lipe Gear Company; Long, Long Mfg. Company; Rock, Rockford Drilling Machine Company; Russ, Russell Mfg. Company.

Automatic Clutch Control—Ben, Bendix Brake Company. †Bendix optional at extra cost.

Transmission Make—*All 3 speed. All synchronized mesh. DG, Detroit Gear and Machine Company; WG, Warner Gear Company; Mun, Muncie Products; Own-A, Automatic self-shifter.

Free Wheeling Make—LGS, LGS Mfg. Company; DG, Detroit Gear and Machine Company; WG, Warner Gear Company; NP, New Process Gear Company; †DG, optional at extra cost.

Universals—M, Mechanics Universal Joint Company; O, Own; S, Spicer Mfg. Company; U, Universal Products Company.

Rear Axle—Col, Columbia Axle Company; NP, New Process Gear Company; Sal, Salisbury Axle Company; Tim, Timken Detroit Axle Company; ½, semi-floating; ¾, three-quarter floating; F, full floating.

Type Final Drive—Hy, hypoid; Sp, spiral bevel; wo, worm.

Brakes Make—Ben, Bendix Brake Company; Mid, Midland Steel Products Company; SW, Stewart Warner Corporation; Lock, Lockheed Hydraulic Brake Company; Ross, Ross Gear and Tool Company; Sag, Saginaw Products Company.

Brakes Type—Hyd, hydraulic; Mech, mechanical. **Amplifier**—SWM, Stewart Warner mechanical; B-K — Bragg-Kleisrath vacuum booster.

Steering Gear Make—Gem, Gemmer Mfg.

Springs, Rear—Cant, cantilever; Cant-2, double cantilever; F, full-elliptic; S, semi-elliptic; S-Tr, semi-transverse.

Spring Shackles—Eat, Eaton Axle and Spring Company; Faf, Fafnir Bearing Company; Rub, Rubber Shock Insulator Company; Sil-U, Pressed Metals of America, Inc.; Tryon, Sayre Bolt Co. **Using both Fafnir and Rub. ‡‡Front, rubber; rear, steel.

Chassis Lubrication—Bijur Lubricating Corporation; Al-Z, Alemite Zerk, Alemite Mfg. Company; Alem, Alemite Mfg. Company; Myers, Myers Chassis Lubricating Company.

Tires—Stutz 145-inch wheelbase models have 20x7.00.

MET. SECTION S. A. E. TO MEET MAY 18

New York, May 16.—Z. D. Granville, president Granville Aircraft, and Cy Caldwell are scheduled to address the metropolitan section Society of Automotive Engineers on "High Speed Airplanes" at a meeting of the aeronautic division of the section to be held at the Hotel New Yorker at 8 p. m., May 18. At the same meeting the marine division of the section will hear a paper on the "Development of the Modern Propeller for Speed Boats," by F. T. W. Meyers, Federal-Mogul Corporation, Detroit. The meeting will be preceded by the usual dinner at 6.15.

U. S. PATENT GRANTED CONTINENTAL-DIVCO

Detroit, Mich., May 16.—The Continental-Divco Company, a subsidiary of Continental Motors Corporation and builders of the low-aisle type of house-to-house delivery vehicle, has just been granted U. S. Patent No. 89,574 covering its body design, according to W. R. Angell, president of the company.

This latest patent is one of fourteen under which Divco delivery products are manufactured, the statement continues. Continental Divco claims to have originated the low-aisle type of delivery unit and now has secured further protection for its modernized, ornamental design with sloping windshield.

FEWER LICENSES GRANTED

Quebec, May 16.—The number of motor vehicle licenses granted in the province since the beginning of the year amounts to 95,670, according to Emile Joncas, director of the automobile branch of the Department of Revenue. This is a slight falling off, as compared with figures for the same period last year.

A. S. T. M. ANNOUNCES NOMINATIONS

According to the latest issue of the A. S. T. M. Buletin, the following slate of nominees for officers of the American Society for Testing Materials has been named by the nominating committee of that society:

For president, T. R. Lawson, head of the department of civil engineering, Rensselaer Polytechnic Institute, Troy, N. Y.

For vice-president, Hermann von Schrenk, consulting timber engineer, St. Louis, Mo.

For members of executive committee: F. A. Barbour, consulting hydraulic and sanitary engineer, Boston, Mass.; A. C. Fieldner, chief enginer, experiment stations division, United States Bureau of Mines, Washington, D. C.; C. N. Forrest, representative of the Barber Asphalt Company, Philadelphia, Pa.; J. C. Pearson, director of research, Lehigh Portland Cement Company, Allentown, Pa.; A. E. White, professor of metallurgical engineering and director of enginering research, University of Michigan, Ann Arbor.

SUITABILITY OF VARIOUS GEAR LUBRICANTS OUTLINED

(Continued from Page 5)

there is an absence of abjectionable sticky or tacky effects.

It is not advisable to thin these compounds, as is also true in the case of gear "shields," by adding a non-viscous mineral or fixed oil. Trouble will invariably result because of improper solubility.

Mineral oils have largely replaced fixed oils as the major component part of gear lubricants because of the natural characteristics of fixed oils to become gummy, even though it is true that fixed oils have greater lubricity. When gears are subjected to extreme moisture or water conditions it is necessary to use a lubricant having a large percentage of fixed oils. Water will displace a straight mineral oil and cause trouble, but will combine with a fixed oil and form an emulsion or lather.

Gear lubricant fillers are of many and varied kinds. Sludge wax soap bases are used in making up the most inexpensive lubricants. The extreme vertical viscosity curve of such lubricants indicates their undesirability for use under extreme temperature working conditions.

Graphite has been used with good success as a partial filler, and in addition it results in making the lubricant highly adhesive. It is not recommended under high heat conditions, however, as it loses its adhesive properties with increased temperature. Oxidized petroleum and fiber mixtures make up some of the best fillers for general gear lubrication Th.e metal admixture making up the base of metal-base compounds contributes the major part of the filler used in extreme-pressure lubricants.

Grease should be used as a gear lubricant only where there are special reasons against the use of other gear lubricants.

A lubricant with sufficient adhesive and viscos qualities to adhere to the profiles and maintain a protective film has in general an internal friction co-efficient so high that undue heating of bearings results if used for bearing lubrication.

When both gears and bearings are to be lubricated by the same lubricant, a compromise must be made. The viscosity is lower than would be used for gear lubrication and higher than would be used for best bearing lubrication. For this reason, wherever possible, bearings should be isolated from the gear case, each being supplied with the proper lubricant.

Heavy flywheel effects, which result in setting up a condition of constant unit pressure on the drive, requires a heavier viscosity gear lubricant than would be recommended in the absence of the flywheel action.

The use of gear lubricants containing non-lubricating fillers in the form of powdered asbestos and similar mild abrasives, and for which the corrective wearings of the profiles to their proper involute form is claimed, are not recommended by the best authorities. Their recommendation would seem very reasonable after studying the physical changes which takes place between the profiles during the angle of action.

Any incorrectness between the profiles is as the result of misalignment caused by either worn bearings or inaccurate workmanship. This misaignment causes abnorma wear with a resultant backlash which in turn results in noisy gears. Authorities are agreed that lubricants will assist in minimizing the effects from misalignments, but they cannot and will not correct the cause. Pitting and scaling of the profiles along the pitch line is due to misalignment as much as due to the use of improper lubricant.

The transmission loss resulting from the kind and amount of gear lubricant is an important factor. The lowest viscosities are used for better lubrication and minimized transmission loss. This loss increases in direct ratio to the mean viscosity of the gear lubricant.

Units combining high unit pressure and high pitch-circle velocities can use a non-viscos oil to assist in minimizing both transmission loss and heat. Under such conditions the small coloidal structure of the lubricant is not affected because of the short period of contact. This time element is so short that the film of oil resists rupture under the intense pressure.

An excessive amount of lubricant is the cause of a surprising amount of transmission loss. This loss was shown in the case of a Layland gear box which was designed to operate at one quarter full. This gear box was operated with varying amounts of lubricant and the efficiencies recorded when one quarter, one half, three quarters and rim full; the recorded efficiencies were 97.5, 94, 90, 74 per cent. respectively.

The frictional heat developed between the mating profiles of gear teeth spreads through the gears and shafts into the bearings and gear case and is there dissipated by either radiation or by specially designed cooling systems. Change in temperature forms a true guide to the quality of oil in service or to its method of application. Any reduction in the frictional temperature brought about by introducing another lubricant or changing its method of application means that the lubricant or the changed method is better or more suitable for the existing conditions.

Buffalo Section S. A. E. Hears Capt. A. W. Stevens

(Continued from Page 5)

Wheel Tramp and Shimmy Phenomena."

John A. C. Warner, general manager of the S. A. E., will act as honorary chairman for the evening.

Capt. Stevens' achievements in aerial photography during the World War and in subsequent years have marked the pathway of progress in this line of endeavor. He was chief photographer of the National Georgraphic expeditions to photograph the solar eclipses of 1923 and 1932. In 1924 he flew 12,000 miles over the Amazon jungles to map the uncharted Parima River from the air. Following this work he photographed the highest peaks of the Andes Mountains, and more recently startled the entire photographic world by taking a picture of Mount Shasta from Salinas, Cal., 373 miles away. This photograph holds the world's record for the amount of territory covered in one picture.

Dr. Dickinson, chief of the heat and power division, National Bureau of Standards in Washington, ranks as one of the most important figures in this branch of government activities.

This is the last meeting under the present section officers: M. A. Thorn, chairman; F. A. Smith, vice-chairman; L. R. Jones, secretary-treasurer. The new officers, Fred A. Cornell, chairman; Karl M. Wise, vice-chairman, and Carl F. Lautz, secretary-treasurer, take office following the meeting.

PENNSYLVANIA WINS STORE-DOOR ISSUE IN SUPREME COURT

(Continued from Page 1)

under the firm name of the Jay Street Terminal.

The petitioners contended that the Pennsylvania had violated the Interstate Commerce Act by not seeking a certificate of public convenience and necessity to extend its service by establishing a freight terminal service affecting store-door collection and delivery by use of motor trucks operated from and to its water front stations.

This service was inaugurated by the Pennsylvania to meet motor truck competition and embraces the commercial area of the port of New York, which includes the water fronts of Jersey City, New York city, Manhattan, Brooklyn, The Bronx and other boroughs.

SELLING DEALERS ON OWN ABILITY TO SELL

(Continued from Page 3)

who is it that does not appreciate even the slightest courtesy that is well meant.

Second, make a complete analysis of your community marketing possibilities. Check registrations and break them down into percentages of your price bracket. This will reveal the amount of available business, and what portion you may hope to expect. Then check the ability and knowledge of your retail sales organization. Do they know your products thoroughly? (Knowledge is power.) The successful retail salesman must first of all have absolute confidence in himself and be 100 per cent. sold on the products he is selling. Remember always that you cannot instill confidence in the other person's mind unless you truly possess it yourself. Make it a point to plan a daily work routine for your retail salesmen. This will enable them to work more efficiently and lessen the possibilities of hit and miss, which is an existing condition among many retail automobile salesmen today.

Third, see that your demonstrators are kept up mechanically and at all times clean. It is very difficult to create business with a demonstrator that you must offer apologies for. If you form a bad impression in the mind of your prospect resulting from a bad demonstration you will find it rather difficult once this doubt has been created. (Thinking, possibly, that the new car might be no better in performance than your demonstrator.) To convince him to the contrary, by all means make it a religious practice to check your demonstrators each and every morning. Remove squeaks, see that they are clean and that they function mechanically, for only through this care can you hope to accomplish a return for your demonstrator's investment.

Fourth, whether you make money or not depends largely on your knowledge of used car values. It is of most importance when appraising used cars that your appraisals are in line with marketing conditions existing in your community. Under allowance is even more treacherous than over allowance, for eventually you will drive customers away if that practice becomes known. At least once a week you should make the rounds of the various used car departments, from this visit you will get a pretty comprehensive picture as to what is going on and the selling prices existing in your community. This will enable you to become more accurate when making appraisals and at the same time assist you materially.

Fifth, if you do not carry a parts stock by all means do so at once. Why a dealer overlooks the profit possibilities deprived through a parts department is far beyond my understanding. You cannot hope to maintian a successful service operation without a parts department, and a few seasonable accessories are also recommended. By maintaining this department it will enable you to not alone render more efficient and prompt service, but you will find it a creation in cementing a closer relation with your customers.

Sixth, make a survey of the available service business, then go after it. In the face of these existing conditions your service department offers the best money making possibilities.

Put your house in order, and by the increase of contacts through each department of your organization it will enable you to get a bigger portion of the available business. Get yourself in financial shape; for just as sure as you are a foot high or over good business is coming back to the car dealers, and to handle a volume business it necessitates capital.

MARCH WHOLESALE TIRE PRICES OFF

Washington, May 16.—The average wholesale prices of tires dropped somewhat in March as compared to February according to figures just issued by the United States Bureau of Labor Statistics, but are still above the March, 1932, level.

The average balloon tire sold for $8.748 in March as against $9.10 in February and $8.475 in March, 1932. Cord tires averaged $4.548 in March as against $4.767 in February and $4.461 in March, 1932. The average truck or bus tire sold for $25.156 in March in comparison to $26.382 in February and $24.287 in March, 1932.

Wholesale prices of inner tubes held even in March at an average of $2.251, the same as that of February, and still considerably above the March, 1932, average of $1.957.

Taking 1926 prices as a hypothetical 100, the wholesale prices of the tire and tube industry in March were on a 41.3 basis as against 42.6 in February and 39.2 in March, 1932. Similar index figures on balloon tires showed a 39.7 average in March as against 41.3 in February and 38.5 in March, 1932. Cord tires sold on a 47.8 basis in March as compared to 50.1 in February and 46.9 in March, 1932. Truck and bus tire index numbers stood at 41.1 in March as compared to 43.1 in February and 39.7 in March, 1932. Inner tubes were on a 40.0 basis in both February and March as against 34.7 in March, 1932.

Six Truck Sales Leaders for April-March, '33

APRIL, 1933 State	Sales	FIRST		SECOND		THIRD		FOURTH		FIFTH		SIXTH	
Arkansas	206	Chev	120	Ford	64	Int	13	Dodge	8	Indiana	1		
Delaware	77	Chev	41	Ford	16	Int	10	A-G	2	Indiana	1		
Florida	194	Chev	81	Ford	57	Austin	22	Int	19	Dodge	8	Stude	2
Georgia	334	Chev	209	Ford	72	Int	18	G Mc	8	Austin	7	D-S	4
Idaho	50	Chev	26	Ford	15	Int	6	Dodge	2	GMC	1		
Illinois	1371	Chev	429	Ford	275	Int	218	DT	88	Dodge	57	GMC	53
Kansas	80	Chev	51	Ford	13	Int	7	Stude	3	D-G	2	DT-Wi	1
Louisiana	165	Chev	77	Ford	36	Int	31	DT-D-G	5	Austin	3	Stude	2
Maryland	215	Chev	115	Ford	41	Int	22	Dodge	11	Brockway	8	GMC	7
Michigan	292	Ford	105	Chev	103	Int	34	Dodge	24	GMC	9	Reo	7
Minnesota	258	Chev	107	Ford	73	Int	25	DT	14	Dodge	6	Reo	5
Montana	180	Chev	61	Ford	50	Int	45	Dodge	8	Reo	7	Mack	4
New Hampshire	132	Ford	57	Chev	48	Int	12	Dodge	5	R-Ro	2	*	1
North Carolina	394	Chev	211	Ford	104	Int	42	GMC	9	Au-D	8	Stude	5
North Dakota	37	Ford	15	Chev	13	Int	6	Dodge	3				
South Carolina	197	Chev	117	Ford	55	Int	9	Au-D	5	G-M	2	R-S	1
South Dakota	38	Chev	18	Ford	9	Int	8	Dodge	2	DT	1		
Utah	69	Chev	45	Ford	14	Int	5	Dogde	3	GMC	2		
Vermont	84	Ford	31	Chev	24	Int	11	Dodge	6	DT	5	R-Wi	2
Virginia	330	Chev	180	Ford	93	Int	23	GMC	14	Dodge	13	S-W	2
West Virginia	200	Chev	93	Ford	54	Int	21	Dodge	11	GMC	7	White	4
Wisconsin	372	Chev	184	Ford	68	Int	45	GMC	24	Dodge	16	DT	15
Dist. of Col.	80	Chev	36	Ford	18	GMC	17	Int	5	Dodge	2	Au-A	1

MARCH, 1933 State	Sales	FIRST		SECOND		THIRD		FOURTH		FIFTH		SIXTH	
Arkansas	135	Chev	86	Ford	30	Int	11	Dodge	3	Stude	2	Au-R	1
Delaware	47	Chev	31	Ford	10	Int	5	GMC	1				
Florida	201	Chev	81	Ford	49	Int	27	Austin	25	GMC	6	Dodge	4
Georgia	113	Chev	69	Int	15	GMC	9	Ford	5	Federal	4	Austin	3
Idaho	18	Chev	12	Int	3	D-F-I	1						
Illinois	599	Chev	198	Ford	107	Int	105	DT	49	Dodge	37	GMC	24
Kansas	106	Chev	63	Ford	25	Int	11	Dodge	3	Reo	2	G-Wo	1
Louisiana	55	Chev	27	Ford	12	Int	11	D-G	2	Stude	1		
Maryland	163	Chev	73	Ford	31	Int	21	Dodge	9	Brockway	7	GMC	5
Michigan	319	Chev	132	Ford	60	Dodge	42	Int	41	Reo	15	GMC	10
Minnesota	264	Chev	47	Ford	44	Int	35	DT	14	Dodge	7	GMC	6
Montana	107	Chev	43	Ford	34	Int	21	Dodge	5	GMC	2	Fe-M	1
New Hampshire	73	Chev	38	Ford	16	Int	8	GMC	4	DT	3	Dodge	2
North Carolina	109	Chev	112	Ford	44	Int	20	Austin	7	GMC	5	Dodge	4
North Dakota	16	Chev	8	Int	3	D-F	2	DT	1				
South Carolina	130	Chev	82	Ford	35	Dodge	5	Int	3	Austin	2	Fe-G-I	1
South Dakota	39	Chev	21	Int	6	D-F	4	Stude	3	DT	1		
Utah	50	Chev	30	Ford	11	Dodge	3	G-In	2	White	1		
Vermont	38	Chev	14	Ford	9	Int	4	DT-I	3	D-W	1		
Virginia	262	Chev	156	Ford	58	Int	17	GMC	8	Dodge	6	Au-DT	4
West Virginia	105	Chev	61	Ford	18	Int	10	Dodge	5	GMC	3	Stude	2
Wisconsin	191	Chev	86	Ford	39	Int	35	DT	11	Dodge	5	G-R	4
Distrct of Col.	62	Chev	28	Ford	15	GMC	10	Autocar	6	D-In	2	Au-Fe-M	1

KEY TO ABBREVIATIONS AND SYMBOLS

A—Autocar; Au—Austin; B—Brockway; C—Chevrolet; D—Dodge; DT—Diamond T; F—Ford; Fe—Federal; G—GMC; I—Indiana; In—International; LFR—La France-Republic; M—Mack; P—Pierce-Arrow; R—Reo; Ro—Rockne; S—Studebaker; St—Stewart; W—White; Wi—Willys.